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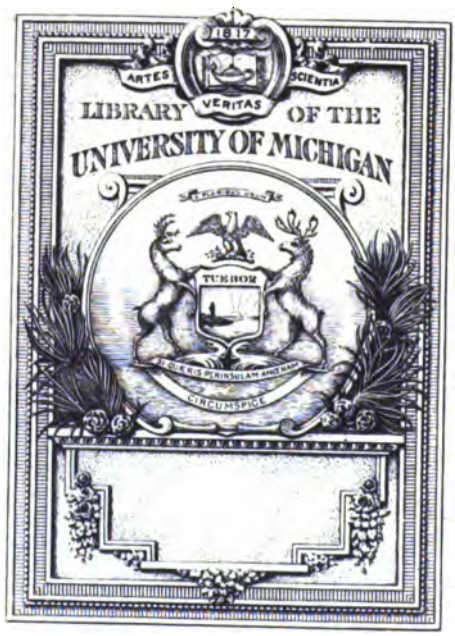
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CONDITION AND DOINGS

OF THE

BOSTON SOCIETY OF NATURAL HISTORY

AS EXHIBITED BY THE

ANNUAL REPORTS

OF THE

CUSTODIAN, TREASURER, LIBRARIAN AND CURATORS.

MAY, 1865.

BOSTON:
PRINTED FOR THE SOCIETY.
1865.

PRINTED BY A. A. KINGMAN,
11, Cornhill, Boston.

General

REPORT OF THE CUSTODIAN

OF THE

BOSTON SOCIETY OF NATURAL HISTORY,

EMBODYING THE REPORTS OF THE LIBRARIAN AND CURATORS OF THE SEVERAL DEPARTMENTS.

FOR 1864–5.

THE official year now brought to its close, has been an extremely interesting one in the history of our Society; and a review of what has transpired and is now occupying the attention of the community in connection with this Institution will doubtless show, in after years, that it has been the transitional epoch of its history, the link which unites the old and the new.

Early in the year, on the second of June, 1864, the Society met in the spacious Hall above, to attend the exercises of the dedication of our new Museum, and to listen to an address by Prof. W. B. Rogers, in which the steps were pointed out by which the Society had progressed from the first small gathering of a few ardent lovers of Nature, up through the various phases of its career, and our warm thanks were expressed to the many patrons through whose generosity the Society was then able to display its treasures of Nature in an edifice far surpassing in magnificence any devoted to kindred objects of which this country can boast.*

In but a few months afterwards the efforts of the Society, in endeavoring to raise a working fund, were crowned with complete success. In August last, the subscription books were closed, which brought the Society into possession of $20,000, received from its many patrons,† in addition

* For a list of subscribers to the "Building Fund," see Appendix A.
† For a list of subscribers to the "Working Fund," see Appendix A.

to the equal sum given by our late most generous benefactor, Dr. William J. Walker; by which Fund the care of the collections of the Society was at once securely established for all time. Other direct results flowed from the donation of Dr. Walker; from one-half of the income of this fund, representing his gift, prize funds are accumulating in accordance with the provisions of his donation, and a committee has been appointed by the Council to carry these provisions into effect; their report will be presented to you at this meeting.* Quite recently we have been called to mourn the death of our distinguished patron, who in his Will has provided largely for this Society, in common with other Institutions of learning, though the exact terms of his bequest have not yet been made public by the executors.

These are the more important outside influences which have been brought to bear upon the history of the Society during the past year; let us now turn to observe its internal workings.

The year has been spent by the officers of the Society† in bringing order, symmetry and harmony into the arrangements of the collections, etc., after the partial confusion into which they were necessarily thrown during the removal of our stores to our new building. The time of the dedication found much accomplished, and this closing year witnesses an orderly state of things throughout the establishment. In attempting to give a clear account of all the operations of the Society in all its branches for the past year, I will first present the statement of the Librarian, following it by whatever else has transpired in other departments beside that of the Museum itself, and close with the reports of the Curators in charge of the different collections.

The Librarian reports that during the past year a great deal of labor has been expended upon the Library and publications; and that the additions have been very considerable, larger, he believes, than have been received in any previous year from the ordinary sources, although only $71.89 have been spent in the direct purchase of books.

* See Appendix B.
† For a list of these see Appendix C.

The following table will show the number of these additions by volumes, parts and pamphlets:

	8vo.			4to.			folio.			
	vls	pts	ph	vls	pts	ph	vls	pts	ph	To'l
Books presented by individuals	55	26	105	13		35	67	1	3	305
" purchased	4	30								34
" deposited by the Republican Institut'n	25	2								27
" received in exchange for our publications	152	357	72	88	152	21	3	90	18	953
" received in exchange from the Smithsonian Institution for duplicates from our Library	9	22	9	8	2					50
" received in exchange from the American Academy for duplicates from our Library	28	6	15	22	43	3	1		1	119
Total .										1488

A careful estimate has also been made of the number of books now in the Library — there are 7,262 volumes, 1,596 parts of volumes and 2,333 pamphlets — in all, 11,191.

Owing to a more liberal policy instituted by the Council about two years since in the distribution of our publications to scientific bodies abroad, we now find our Library rapidly increasing in size in the Transactions of Learned Societies, and every new invoice received through the medium of the Smithsonian Institution (to which we are deeply indebted for their importation free of every expense), adds to their number and value. The ratio of increase has been very great, as may be seen on comparison of the reports of the Librarian for the past few years; a year ago the Librarian reported the number of volumes and pamphlets received during the previous year from this source as 237; the record for the past year shows 953, or four times as many. The number of scientific associations and periodicals at home and abroad with which the Society now exchange their publications is 243.*

The Library has been weeded of superfluous duplicates during the past and a portion of the previous year, the accumulations of years; a MS. catalogue of them has been made with prices annexed, and the more important part of them published in the sale catalogue of Messrs. Wm. Wood & Co., our agents in New York; their sale has already amounted

* A list of these will be found in Appendix D.

to $917.51, and some $200 to $300 worth still remain unsold; this money is still on hand for the purchase of new books, an insignificant portion of it only having been expended; the sum of money thus placed at our disposal being more considerable than has been in our hands for this purpose for some time past, the Librarian suggests that it be used mainly in the purchase of larger works, such as the scientific reports of expeditions sent out by foreign governments, of which the Library lacks a great many; it would however be undoubtedly advantageous to delay any direct action until their cost in our national currency shall not be so great as at present. Besides the Library duplicates which have been sold, others, particularly the publications of Foreign Societies, have been exchanged with the American Academy of Arts and Sciences and the Smithsonian Institution; the total number received from this source, as seen by the table, is 169.

During the year, the work of cataloguing and arranging the Library has progressed steadily; book plates have been placed in every volume to which they had not already been fastened, and to every book in the front room except some of the publications of Societies, has been attached a digest of the new Library regulations, a process requiring considerable time. The books in the back room are now undergoing the same process; every work as soon as received has been entered on the books, catalogued and placed upon the table and shelves, generally with a detention of but a few hours.

There has also been prepared a List, *in extenso*, of the desiderata among the publications of Scientific Institutions, with a view of taking active means to remedy the deficiencies of this part of the Library.

All this work in the Library would not have been possible without assistance, the expense of which has been defrayed partly by the Society's funds, partly by subscription among the members of the Council, and partly from money given to the Society for this special purpose.

There is now no catalogue of the Library except the Card Catalogue, which, in its present condition, the cards being kept loosely in a partitioned box, is not suitable for examin-

ation by the public, because the cards will be misplaced, as, under similar circumstances, they always have been, requiring much time and vexation in their reärrangement—neither are they convenient for use by any one, having outgrown the limits of their former sufficient receptacle; what is now needed is a set of separate trays, with elevated sides and back and open front, in each of which the cards belonging to a few letters can be placed, with rods passing through punched holes in the cards, so as to prevent their removal, but permit their readiest examination by all; this method has been found to succeed admirably in other places, and would seem to be peculiarly suited to our wants; it would become a permanent arrangement, because leaving nothing to be desired in convenience; the only change required by the extension of the Library would be the addition of similar trays.

Much work still remains to be done in order to place the Library in the condition of ready reference and safety which its value demands. Very many of the pamphlets yet remain to be catalogued and placed upon the shelves before they can be of any use to the members; at present they are piled up in heaps awaiting their turn. The whole Library is also in a somewhat unsafe condition so long as we have no separate catalogues wherein the books are arranged according to shelves, or what are generally called alcove catalogues; at present the only means of knowing whether a book has been lost is to look for it on the card catalogue after the attention has been specially called to it; on that account I am unable to report whether or not any books have been lost the past year; a day or two with the alcove catalogue will suffice to tell whether any and what books are missing or misplaced in the whole Library, a work which, without such aid, would certainly require the constant toil of one person for more than a month.

Few persons are aware of the time necessarily consumed in preparing a book for the shelves; take, for instance, a volume of Transactions of some Foreign Academy—it is received through the Smithsonian Institution accompanied by a written blank from them to be signed: it has first to be

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compared with the record on the blank to see if it be correct; next, for the same purpose, with the letter from the Academy that sends it, and an acknowledgment in full made to the Academy for it, and a record of the acknowledgment taken; then entered on the Record of Publications received in exchange, with all the necessary dates and memoranda; next on the Library Accession Catalogue and indexed for ready reference; after this the title page in full written upon a card with all the necessary cross-references upon other cards; stamped with the Society's name, the book-plate affixed and its blanks filled out, the Library Regulations fastened upon the cover and its place in the Library marked in one corner, it is at last ready for the shelves or tables of the Library; all these points are absolutely essential; the time now occupied in taking care of the books which are presented to the Library consumes an average of over two, and perhaps three, hours a day. When we call to mind the yearly increasing influx of books to the Library, it must be apparent to all that where the Librarian holds other offices requiring much time in their fulfilment, a regular assistant becomes indispensable, especially when so much remains to be done to put the Library already in our hands in proper order.

Other expenditures may be referred to, which it is highly desirable should be made upon the Library. There is a multitude of unbound parts of volumes which are ready for the binder's hands, and the number of loose pamphlets is rapidly increasing, and now numbers over 2,000. These ought to be bound separately in a cheap way, on the plan used in the other Boston Libraries, so that persons wishing to take away a pamphlet need not be compelled to transport a thick volume; the new plan is scarcely more expensive than the old.

The dust which is blown in at the sides of our loose windows, and will continue to be blown in, especially while so much of the ground about us is unoccupied as at present, is injuring the books to an unfortunate degree. Weather-strips it is believed would remedy the trouble in great measure,

and perhaps also pay for themselves, in the end, by the saving of fuel.

A book has been furnished, divided off into various subjects, wherein members are invited to record the title, place of publication and price of any book which they desire to have purchased for the Society.

The Librarian is pleased to be able to state that the By-Laws for the regulation of the Library, concerning which there was considerable discussion and doubt when first adopted, just a year since, have proved successful beyond the hopes of the most sanguine. No difficulty whatever has been experienced in the prompt return of books lent, and it has been necessary to impose a fine in but a single instance, when it was promptly paid. He would propose, however, that, as soon as possible, means should be taken to have the Library opened for one or two hours in the evening, for the accommodation of many who find it impossible to come during the day; expressions of such a desire have been frequently made to the Librarian. The number of persons who have taken books from the Library the year past, has been 74, and the number of books taken out, 426.

There have been 18 regular meetings of the Society held during the year, beside two special meetings. In addition to this, the Section of Microscopy has been revived and reorganized under favorable auspices, and seven meetings of this Section have been held ; there has been an average attendance of 34 members at the regular meetings of the Society, and of nine at those of the Section of Microscopy.

At these meetings 23 communications have been presented, as follows:

May 18, 1864.

Prof. J. WYMAN. On the development of moulds in the interior of eggs.

June 15, 1864.

S. H. SCUDDER. Remarks on the physical geography of the Isle of Pines.

Dr. WM. STIMPSON. Malakozoölogical Notices. No. 2.

W. H. NILES. Remarks on the relations between the vegetation and geological structure of the hills of Western Massachusetts.

September 21, 1864.

C. A. SHURTLEFF. The general Plan of Venation in the order of Insects and its modifications in the different suborders.

October 19, 1864.

Capt. N. E. ATWOOD. Remarks on the habits of the Mackerel and Menhaden, (*Scomber vernalis* and *Alosa menhaden*).

November 2, 1864.

Dr. JAMES C. WHITE. Description of two human skulls recently brought from Stockton, California, and presented to the Society by Dr. C. F. Winslow.

Dr. C. T. JACKSON. Remarks on the manufacture of Peat.

November 16, 1864.

Dr. C. F. WINSLOW. On fossil bones from the Andes.

Dr. A. A. GOULD. Remarks on the diverse signification of descriptive terms among Conchologists.

December 7, 1864.

Prof. C. E. HAMLIN. Remarks on some facts connected with the development of Frogs, observed at Waterville, Maine. On a Habit of *Certhia americana*, supposed to have been hitherto unnoticed by authors.

Capt. N. E. ATWOOD. Remarks on the habits of the Dog-Fish, (*Mustelus canis*).

December 21, 1864.

Dr. C. T. JACKSON. Discovery of Emery in Chester, Mass.

January 4, 1865.

Profs. ALEXANDER WINCHELL and OLIVER MARCY. Enumeration of Fossils collected in the Niagara Limestone at Chicago, Illinois, with descriptions of several new species.

Dr. HENRY BRYANT. Remarks on the typical specimen of *Buteo insignatus* Cassin, in confirmation of previously expressed views of the author of the identity of several so-called species of Buteo. An examination of the tongue of *Sphyrapicus varians* in relation to its alleged habit of eating the inner bark of the apple tree.

January 18, 1865.

Dr. B. JOY JEFFRIES. Anatomy and Physiology of accommodation in the human eye.

S. H. SCUDDER. An inquiry into the zoölogical relations of the first discovered traces of fossil Neuropterous Insects in North America, with remarks on the difference of structure in the wings of living Neuroptera.

February 8, 1865.

CHARLES STODDER. Note on *Rhabdonema mirificum.*

March 1, 1865.

Capt. N. E. ATWOOD. Remarks on some points in the history of the Cod-fish, (*Morrhua americana*).

March 8, 1865.

R. C. GREENLEAF. Description of *Nitzschia Mitchelliana.*

March 15, 1865.

Prof. J. WYMAN. Enumeration of the fossil bones from Riobamba, South America, presented by Dr. C. F. Winslow.

During the past year, the Society has elected one Honorary Member, eight Corresponding Members and 76 Resident Members. Of these latter, 21 have not yet ratified their election by the payment of the admission fee, and six others, who have paid, have not fully complied with the regulations for membership by signing the Constitution.

As the Society has not published anything during the past year, of course little has been done in the distribution of our publications abroad. We sent, however, early in the year, the last number of our Journal and nine sheets of our Proceedings to 212 different Societies and Periodicals, which, in addition to a few special gifts, makes the whole number given in exchange to be equivalent to 55 volumes of our Journal and 121 of our Proceedings.

Besides this, 171 parts of the Journal, equivalent to about 43 volumes, and 18 volumes of the Proceedings have been sold, and $180.80 realized from that source.

The Council has, however, recently authorized the Publishing Committee to print the remainder of the ninth volume of the Proceedings; this is now printed, and will be issued in a few days. They were also directed to reprint a single signature of Vol. II. of the Proceedings, the edition of which had been exhausted, which has been done, and copies of Vol. II. may now be obtained.

During the suspension of publication it was decided that the Proceedings could not be furnished any longer free of cost to the members, without serious detriment to the Treasury; and it has been further deemed advisable to change the form of the Journal from 8vo to 4to, and the title at the same time to "Memoirs," and accordingly the Committee were authorized in December last to issue a circular inviting subscriptions to both these Publications, to see if a sufficient number could be obtained to nearly cover the cost of their publication; careful estimates seemed to prove that 200 subscriptions would cover the expense of printing the Memoirs and 300 that of the Proceedings; up to this time 161 names, representing 172 subscriptions, have been appended to the List, viz., 142 subscriptions to the Memoirs and 164 to the Proceedings. It is confidently hoped that 20 or 30 more names will be added within a month, and that other additions will be made so soon as the issue actually commences. Under these circumstances it seems desirable to recommence the regular issue of our publications without delay; it is the only means whereby we obtain the publications of other Societies, an important part of our Library, and a long suspension may bring serious detriment, especially as it is so recently that we have enlarged our list of correspondents.

Some of the back parts of the Journal and Proceedings are entirely out of print, and others nearly so, in consequence of which, a tariff of prices for the different volumes and parts has been established by the Publishing Committee and will be found in Appendix E.

All the copies of the back volumes of the Journal and Proceedings have been carefully examined this year and the latter part of last year; in the early part of this work the Librarian had the welcome assistance of Mr. Horace Mann and Mr. S. M. Buck. These volumes were removed to this building in a great state of confusion; in very many cases the signatures of the Journal had never been assorted, and it was impossible to know how many copies were in the Society's possession until this was done. The copies of the Journal which were perfect in text and plates were placed by

themselves and a list made of them, showing that there are 2,800 parts, besides 48 bound volumes; those of which we had copies nearly complete were next assorted, tied up in bundles and marked, and a list of them taken which shows that we have 731 copies of different parts with the text only, and 874 others with some plates but wanting others, besides some sheets still remaining unfolded as they came from the press. The oversheets still remained with many impressions of plates, from which were culled such separate articles as could be obtained, and the plates added where present; 762 copies of 88 different papers were thus obtained, of which a catalogue has been prepared with prices to each annexed. The oversheets and plates still remaining have been assorted, bundled up and labelled, and a list of each prepared and placed on file; there are 1,716 of the former and 1,830 of the latter, of which 68 are colored.

The copperplates themselves were then examined, and those which were not present searched for in every plate-printing establishment in the city, though but few of the missing ones were found. A list of all the plates which have been published by the Society has been prepared for the Publishing Committee, with a special list of the missing ones. By this it can be seen at once at what cost we may be able to reprint back publications when out of print.

The same care has been bestowed upon the Proceedings, and a complete list of the perfect volumes and oversheets drawn up, by which it appears that we have in our possession 1,175 unbound and 45 bound volumes, and 15,755 oversheets.

An orderly arrangement has also been introduced, in every other direction. A regular account is now kept with every Society with which we correspond, so that on opposite pages the contents of every parcel received or sent are recorded, and the date of their acknowledgment marked. The transmission of our publications, scattered irregularly through several volumes, has also been indexed from the beginning, for more ready reference.

The Recording Secretary has also undertaken to make an authentic alphabetical list of the Members of the Society, of

all classes, from its foundation, in correcting which he has been assisted by Dr. A. A. Gould and T. T. Bouvé, Esq. This list furnishes, so far as possible, the name, residence, time of election and admission of members, the character of their membership, the time and cause of its dissolution, and the offices, if any, held by them. The Records, both of the Society and Council, from the commencement to the present time, have been carefully gleaned for all important data, and the list is believed to be as nearly perfect as practicable. Accompanying it is a list of all the officers since the foundation of the Society, and the times of their entrance upon and exit from office.

In accordance with the provisions of the By-Laws of the Society, the Custodian has opened a Donation Book, in which all objects received for the Museum are entered carefully and numbered by lots. The increase to the Collections during the past year has been very considerable, although only $68.50 has been spent in the purchase of specimens; there are no means of direct comparison with the accessions of former years. The donations number 443 lots and 21,155 specimens, about half of which are Insects, principally forming the cabinet of the late Mr. C. A. Shurtleff, which was bequeathed to us, together with his other collections and accompanying papers; they form the most valuable addition of the year.

The opening of our collections once more to the public, after their long storage, has made our halls again the favorite resort of many; the number of visitors has varied but little, notwithstanding the difficulty of access to the building in the severe winter weather, the unheated apartments at that time, and the breaking up of the ground around us in the spring. No regular record was kept of the number of visitors in the early part of the official year, but since the first of January they have been 7,363 in number, averaging 272 on public days.

We will turn now to the Reports of the Curators. These I have concluded to present, not in any scientific arrangement, but in the order which one would naturally take in

passing through the building, endeavoring in the account of each department to give not simply the additions that have been made to it and the work that has been bestowed upon it during the year, but also some general statement of what the collection is as a whole, since no connected account which should combine all the departments, has ever been attempted of recent years. Owing to the absence of some of the Curators, the statements with regard to their collections must be very meagre, but such as they are, they are offered for your consideration.

The principal collection upon the lower floor is that of Botany. The Curator reports it to be in admirable preservation; the plants are arranged in Manila paper covers and are classified according to Endlicher's Genera Plantarum, the object of this classification being that any one can readily turn to any cover, by ascertaining the number of the desired genus in Endlicher's work, as the covers of the plants bear numbers in accordance and are ranged in numerical sequence around the room. The collection of plants is large, and represents to a great extent the Flora of North America, besides being rich in European forms. The great bulk of the Herbarium was the result of Dr. Benjamin D. Greene's botanical correspondence with the first botanists of Europe for twenty-five years, as well as a constant interchange of specimens with American collectors. Some of his collections were very valuable, such as a suite of the plants collected in Franklin's Arctic Expedition. Among the more interesting acquisitions were Lindheimer's and Wright's Texan and New Mexican collections, Vauthier's Brazilian plants, Bertero's Chilian collections, and various local ones, which remain as yet undistributed, as they were received from Dr. Greene, though they have been thoroughly examined and are free from danger of the ravages of insects. During the last few years the Society has come into the possession of very valuable collections of cryptogamous plants. Bailey's Algæ are well known as an extensive suite of the highest importance as authentic forms of the author's own description; the Fungi presented by the Curator himself, the fruit of many

years' collections, numbering some thousand species, are valuable as being, many of them, new and authentic species named from these very specimens. A collection of dried fruits and seed-vessels has been commenced, and the cabinet devoted to this purpose already exhibits a goodly display, numbering about 250 specimens.

The means of study offered to the public are naturally restricted when the objects to be examined are dry, crumbling leaves and flowers. Much work remains to be accomplished, and until the loose specimens are securely glued to paper, the Herbarium must necessarily remain locked from general study; only those who are thoroughly familiar with the handling of perishable specimens can be permitted to have access to the Herbarium in its present state. The principal additions during the past year have been a collection of New England plants, about 1,800 in number, the bequest of our late member, Mr. C. A. Shurtleff, and an admirably preserved suite of German plants, numbering over 1,200 specimens, from Col. Joseph Howland. Besides these we have been the recipients of various minor donations from Drs. Kneeland, Otis, Pickering and C. G. Putman, the Rev. Charles Mason, Mrs. Fielding, Miss Kingman, Messrs. L. Babo, N. Bishop, D. J. Browne, A. T. Hall, C. H. Parker, O. Pickering, S. H. Scudder, John R. Willis and N. Willis, and the Essex Institute.

The small room adjoining the Botanical apartment is that devoted to the Section of Microscopy. The Bailey Bequest forms the basis of this collection, of preëminent value. The slides number nearly 1,400, accompanied by manuscript catalogues or other memoranda, in which the position of more than 3,000 individual objects on the slides are noted with reference to Bailey's universal indicator for the Microscope; these are mostly Diatomaceæ, but there are also many animal tissues and recent and fossil vegetable tissues. In addition to these there is a great quantity of original specimens of microscopic material, collected by various scientific and exploring expeditions, and an extensive series of specimens received from European correspondents, including Ehrenberg

and other distinguished microscopists. There is also a volume of microscopic memoranda, containing many valuable notes, and not less than 3,000 sketches, highly valuable as an illustrative accompaniment to the microscopical collection, and a large number of scientific letters containing many valuable scientific facts, well worthy of publication. The rough material has been carefully catalogued by the Curator, and numbers 534 lots. The process of re-cataloguing and arranging the mounted specimens to accommodate them to the indicators now in use has been undertaken by some of the members of the section, and is progressing favorably. The only other collection in this department worth mentioning is that purchased of the heirs of Dr. W. I. Burnett, containing his collection of Acari and other mounted objects, numbering in all about 600 slides, many of them with a number of specimens on each; about 400 of them are animal parasites and the remainder miscellaneous objects such as minute animal organisms, hairs of different animals, etc.

In the Vestibule is displayed the principal portion of the Society's collection of fossil foot-prints, brought together mainly by the late Mr. Marsh and purchased after his death. It is of considerable size and contains many slabs of great magnitude, some of them the finest known, which are of special value in exhibiting the measure of the stride of the paradoxical animals whose impress they bear, as well as in giving one an idea of the abundance of life on the ancient shores of the Connecticut; one important addition has been made during the past year in a slab containing the track of the Cheirotherium from Sorton Quarry, near Liverpool, for which we are indebted to George Moore, Esq., of the Liverpool Free Museum and Capt. Anderson of the Cunard Steamship China. Another important and exceedingly interesting donation the last year has witnessed, is the original cast in sandstone of bones of one of the animals which formed these tracks upon the sandstone of the Connecticut River, almost the only important remains of this nature which have yet been discovered, rescued by Prof. W. B. Rogers from the Government edifice at Newport, into which

the block of sandstone containing them was about to be placed, and presented by him to us early in the year. With the exception of these slabs, the Geological and Palæontological collection occupies the eastern half of the principal hall of the Society's Museum and the large room leading from the main hall at the south-eastern corner. In the first case upon the northern side, are placed the fossil bones and other specimens of such species of animal life as have existed on the earth since its occupation by man, i.e., during the period known as the "Era of Mind." Here may be seen some of the remains of enormous birds which have but recently become extinct. Also specimens of rock such as is now forming at Florida, of which a considerable part of that peninsula is composed, made up of the comminuted shells and corals of the adjacent waters. Here, too, are specimens of art, such as jars, bottles and other objects, cemented together by coralline and other deposits, from the bottom of the sea in the Margarita channel eleven fathoms deep, where they were submerged forty years or more since, by the destruction of the Spanish man-of-war San Pedro. These are exhibited to show the progress made in the brief period since their deposit, towards uniting them in a solid conglomerate, and also as an example of the rate of growth of the coral polypidom. There are also in the same case skulls and other remains of the elephant and mastodon of this continent, and of various animals, all of which were contemporaneous with man, or existed but a short time previous to his epoch, certainly since the earth has presented generally the same features of land and ocean as at present; the specimens in this case number 198.

Following this, and extending around the end of the hall until reaching the passage way to the south-eastern room, is a series of cases filled with shells and fossil bones or casts of bones of the Pliocene and the Miocene Tertiary periods. In these may be found representatives of a large number of the remains of carnivorous and herbivorous animals, as well as some huge reptiles, all from the deposits of the Sivalik Hills in India. The specimens in these cases number 572. On the the southern side, toward the middle of the hall, is a case

filled with the remains of the life of the Eocene period. Here are some bones of the gigantic Zeuglodon, almost an entire series of the vertebræ of one of which is ranged around the space for the stairway on the middle of the northern side of the hall. In the same case are many beautiful fossil shells of the Paris basin, and some fine impressions of Fishes from Monte Bolca. The number of specimens in this case is 590.

Passing into the south-eastern room, and commencing with the series of wall cases at the right entrance, the visitor first finds the remains of the period in the earth's history next preceding the Tertiary; viz., the Cretaceous or chalk period. Here the specimens are all of marine origin, and the prevalence of Echinoderms becomes a prominent feature among them; about 350 specimens fill the cases of this period; a large proportion of these were presented by Mr. James M. Barnard. Next in order, as we proceed toward the earlier developments of life, we come to the Jurassic period; and in the cases devoted to its animal remains are to be found many rare specimens of Echinoderms, of Ammonites and other unique forms, together numbering about 260 specimens, including some in horizontal cases on the same floor. Then succeed the fossil remains of the Triassic period in the next cases, and these include the splendid collection of the animal impressions upon the Red Sandstone of this age belonging to the Society, the first of which have been referred to as adorning the walls of the hall of entrance. Some of the most interesting of these impressions may be seen in the horizontal cases upon the floor, as well as many good impressions of Fishes from the rocks of the same age. The specimens of this period number about 170. We come next to those of the coal period arranged in the succeeding cases, where may be seen the fossil plants from the shales that accompany the coal, to the number of about 225 specimens. To these succeed the remains of the Sub-carboniferous period, about 100 specimens; then those of the Devonian period, about 230 specimens; and finally we come to those of the earliest, the Silurian ages, which are represented by many forms of corals, shells and Trilobites, numbering over 500 specimens. The

whole collection may be said to consist of about 3,200 specimens all arranged and labelled.

During the past year the cast of the Megatherium presented to the Society by the late Joshua Bates, Esq., of London, has been mounted. This was put up in the centre of the eastern part of the main hall by Mr. Sceva, with artistic skill, under the superintendence of Prof. Jeffries Wyman and Dr. J. C. White, and it is believed to present a posture in accordance with the character and habits of the animal.

The additions during the past year have been considerable, amounting in all to 825 specimens. The most important are a series of casts of large animals obtained from Prof. H. A. Ward in exchange, and a collection of fragments of fossil Mammals from the Andes, collected and presented by Dr. C. F. Winslow. The other donors are the Smithsonian Institution, Prof. H. A. Ward, Drs. H. I. Bowditch, S. A. Green, T. B. Hitchcock, C. T. Jackson and S. Kneeland; and Messrs. E. A. Brigham, W. H. Dall, S. Rice, J. T. Rothrock, H. B. Stanwood and S. H. Scudder.

The north-eastern room is devoted to the Mineralogical collection which is arranged according to Dana's system. There are about 1,500 specimens on exhibition. A great deal of labor has been spent upon the collection by the acting curator, Mr. Bouvé. Within the last three months the whole collection has been entirely reärranged, and every specimen, with few exceptions, has been washed and will soon be labelled. 268 specimens were added during the past year by Drs. A. A. Gould, C. T. Jackson and B. S. Shaw, Rev. E. B. Eddy, Messrs. W. H. Dall, W. T. Eustis, S. H. Scudder, E. L. Sturtevant, and a company of gentlemen.

The space allotted to the collection of Comparative Anatomy and Mammalia, comprises the entire lower floor of the western extremity of the main hall, opposite the Palæontological collections, with the adjoining apartments. The cases in the hall are entirely devoted to the reception of mounted mammalian skeletons, in which department it may be con-

sidered the most extensive of any in the country; the south-western room is partially occupied by the skeletons of the ruminants which could not be accommodated in the large hall, and the skeletons of the birds and reptiles; the rest of this room contains the collection of mammalian crania; during the past year the Curator has prepared sections of a series of skulls, representing nearly all the families in the various orders of Mammalia, which have been placed in one of the cases and form an instructive illustration of the comparative size and shape of the brain in this class of the animal kingdom. In the north-western apartment the mounted skeletons and parts of skeletons, the odontological cabinet, the skulls of reptiles, the specimens illustrating the comparative osteology of birds and fishes, the dried dissections and the preparations in alcohol consisting of mammals, embryos, etc., are placed. The Curator calls attention to the large collection of skins, which has not yet been placed in the hands of the taxidermist, for want of the requisite amount of money, and is still in the cellar exposed to injury from insects, hoping that an early appropriation may place this interesting department in a proper condition for exhibition.

Three interesting skeletons have been mounted and placed in the cabinet the past year; viz., the Porpoise, White Whale and Dromedary. So far as practicable, colored representations of the animals have been placed in connection with the labels in the cases containing the mammalian skeletons. The most marked deficiencies in the department are the imperfections in the series of mammalian skulls and particularly the small size of the anthropological cabinet.

At the beginning of the present year the collection, apart from the skins of mammals which were not estimated, amounted to 1,040 specimens, as follows:

Mammals — skeletons mounted, 73; skeletons unmounted, 25; parts of skeletons, 107; skulls, 279; teeth, 93.

Birds — skeletons, 25; parts of skeletons, 56; skulls, 87.

Reptiles — skeletons, 13; parts of skeletons, 8; skulls, 12.

Fishes — parts of skeletons, 57; skulls, 21.

Alcoholic specimens, 100: horns, 50: miscellaneous, 25.

The additions during the past year are enumerated by the

Curator as follows: Skins of mammals, 17; bodies of mammals, 3; mammals in spirits, 4; skeletons of vertebrates, 8; parts of vertebrates, 13; skulls of vertebrates, 32; miscellaneous, 7; total, 84.

The donors have been Drs. H. Bryant, W. Channing, W. E. Coale, C. T. Jackson, S. Kneeland, B. S. Shaw and C. F. Winslow; Mrs. James Phillips, Rev. R. C. Waterston, Capts. N. E. Atwood and Philip Howland; Messrs. Wm. Beetle, Brewer, W. H. Dall, W. P. Kuhn, C. L. Parker, H. A. Purdie, J. G. Rich, S. H. Scudder, C. A. Shurtleff, W. M. Thorup, and Todd; the Chicago Academy of Science, and the Lyceum of Natural History, at Williams College.

The Ethnological collection is temporarily displayed in the deep cases of the north-western room, designed to contain eventually the skins of mammals. It was founded only a few years since, upon the gift of the Boston Marine Society, which consisted of wearing apparel, models of canoes, etc., of the Chinooks, and from Russian America; various implements of warfare and household utensils from Central America, the Hawaiian, Kingsmill, Hervey, Feejee, and Navigator Islands, from the Papuan groups, the East Indies, and the Anamo-Siamese countries, a small collection of Egyptian relics, and African krisses of iron procured and forged by the negro tribes. There have been added to this the collection formed in this neighborhood by the late Mr. Thoreau, and bequeathed us by him, consisting of stone implements of war and home of the aboriginal inhabitants of New England. The most interesting accession of the past year has been the series of casts of ancient Mexican masks from the originals in the possession of the American Philosophical Society, presented by the Smithsonian Institution. Other donations have been received from Mrs. James Phillips, Messrs. E. A. Brigham, W. H. Dall, W. L. Parker, Dr. C. F. Winslow, and a company of gentlemen. In presenting his report the Curator of this department offers the following suggestion for the arrangement of a collection of this nature; — a collection of the handiwork of nations should be arranged according to

the distance from the historic centre, or Egypt; beginning at the farthest remove:

1. The aboriginal American tribes and nations.
2. The islanders of the Pacific, Polynesians, Micronesians, Negrillos and Papuans.
3. The Australians.
4. The East Indian tribes.
5. Madagascar, and Equatorial and Austral Africa.
6. The Japanese and neighboring more Northern islands, with the North Eastern border of Asia.
7. The Chinese empire, with Tartary and Northern Asia.
8. The Anamo-Siamese countries.
9. Hindostan.
10. Persia, Northwestern Asia and all Europe.
11. Arabia, Mesopotamia, Syria, North Africa and Egypt.

The wall cases of the first gallery are devoted exclusively to mounted birds, which also occupy a portion of the southern side of the upper gallery. The collection is in very good condition. The Curator complains that owing to the plan of the cases in the gallery, it is impossible to introduce a careful systematic arrangement; it is much to be hoped that we may soon be able to open one of the side rooms in which this interesting department more properly belongs, to obviate the difficulties which at present are insurmountable. The Curator urges further that immediate measures be taken to tighten the joints of the cases, through the defects of which the birds are too liable to injury from destructive insects, and to keep out the too powerful light to which they are permanently exposed, and by which they will be inevitably ruined. The collection numbers about 2,500 mounted specimens; as a general one it represents very well the different orders and families of birds and affords a very favorable opportunity, with the aid of our library, to study general ornithology. As a special collection, however, of the birds, first of the State of Massachusetts, secondly of the United States, and lastly of North America, it is extremely deficient; and it is of the highest importance that this deficiency be remedied as soon as possible. We need particularly specimens of all our

common birds in different states of plumage, commencing with the nestlings. The Curator hopes the Society may be able to authorize the necessary expense for doing this the present year. The donations for the past year have not been very numerous; they number 188 specimens received from the Chicago Academy of Science, Prof. W. B. Rogers, Drs. Aten, Bryant and Coolidge, and Messrs. E. A. Brigham, P. A. Gidney, T. Kumlein, S. H. Scudder and J. T. Smith, and by purchase.

The Department of Oölogy is at present limited to a few of the railing cases of the upper gallery, designed for Insects; it numbers about 800 specimens of eggs and nests on exhibition, almost entirely of American species. During the past year there has been an addition of 164 specimens from Drs. Bryant and Packard, Messrs. Hills and Willis, and the Chicago Academy of Science, and by purchase. Most of them, however, were either of very common species or of little scientific value. The Curator considers it worthy of remark that the eggs of any bird, unless the parent bird has been fully identified, are of no scientific value whatever; and farther that there is no department in Natural History wherein absolute and exact care in ascertaining and in permanently recording the origin of each specimen, is so essential to its value; the eggs of very many species are absolutely indistinguishable from those of several others, unless thus determined. Nor is it enough to ascertain their origin alone; to remain of permanent value, this knowledge must be associated with the specimens by some abiding records of paternity. These important and indispensable laws cannot be too strongly urged upon the attention of all who would make collections for themselves or others, for scientific purposes; without constant attention to exact identification, collections are valueless and specimens are of no intrinsic importance.

Owing to the absence of the Curator of Conchology, I am unable to give so full an account of our admirable collections in this direction as is desirable, though I have received from him some notes in regard to them. The Gasteropods alone

are exposed to view, temporarily arranged in the railing-cases of the first gallery. This disposition does not allow of the display of the larger and more showy specimens, so that altogether not more than one-third of the collection is on exhibition, the remainder being stored in one of the unopened rooms, which we hope may soon be furnished for their public display; in consequence of the want of any suitable place for the exhibition of the specimens in this department, the collection remains much as it was at the last annual report. The Curator calls attention to the deficiency of the Museum in alcoholic specimens of Mollusca, which would greatly enhance the interest and value of the collection for scientific purposes. Some interesting collections have been received during the past year, especially a collection of determined species containing over 500 specimens from Cape St. Lucas, received from Dr. Bryant, and another smaller collection of Cuban shells from Dr. Gundlach. The additions have amounted to nearly 2,500 specimens, received from Drs. S. A. Bemis, H. I. Bowditch, H. Bryant, J. Gundlach, S. Kneeland, A. S. Packard, and C. F. Winslow; and Messrs. Bishop, Dall, Hubbard, Scudder, Shurtleff and Willis, and by purchase.

The upper gallery is devoted to the remaining departments. That of Herpetology occupies the wall cases at the eastern end. The collection consists of about 500 species, not far from half of which are upon exhibition. This number, though small, represents to a tolerable degree the Reptiles of New England, and contains some rare specimens from this, as well as foreign countries; it is much to be regretted, however, that the department wants some of the most common, even, of our Massachusetts reptiles, a deficiency which ought least of all to occur here, and which it is hoped will speedily be remedied, now that it is known. The Curator has been occupied during the past year, as far as time and opportunity allowed, in continuing the identification and classification of the specimens under his care. As soon as this important work can be accomplished, each specimen will be labelled carefully; at present, the collection is

only distinguished by numbers, referring to a numerical catalogue in course of preparation. The collection is, in every way, in a more satisfactory condition than for some time past; but it is a source of regret that so many of the specimens were, in former years, received and deposited without being identified or any distinguishing mark placed with them, not only making the labor incumbent on the present Curator far more arduous, but rendering the collection of far less value than it might have been with more attention to these important points. As soon as it is possible to complete the arrangement of the collection now in possession of the Society, the Curator has assurance of additions, by donation and exchange, to enable him to fill out certain of the deficiences which exist. Although the space allotted to this department is large enough to accommodate the present collection, the Curator calls our attention to the fact that it cannot long remain so with the ordinary influx of material for display, and urges the fitting up of one of the unoccupied apartments, for his collection, and that of Ichthyology. The additions to this department during the past year have amounted to 140, and have been received from the following gentlemen: Drs. Bryant, Shaw, and Winslow; Messrs. F. Andernach, Bishop, T. T. Bouvé, L. L. Holden, J. Robertson, R. Scott, S. H. Scudder, C. A. Shurtleff, E. F. Snow, H. C. Whitten, and by purchase.

The cases in which the Ichthyological collections are displayed, are those against the northern wall of the upper gallery. At the beginning of the year the collection consisted of nearly 650 species, represented by about 1,800 specimens, all but 200 of which are preserved in alcohol.

The arrangement of the collection is that of a faunal one and in this only the larger faunal districts could be designated, as the collection is not yet large enough to show the more limited faunæ. The specimens thus arranged come under the following Zoölogical Provinces.

1. The Atlantic coast of North America, from Cape Hatteras northward, including Greenland; represented by about 90 species.

2. The Atlantic coast of North America southward to Cape St. Roque in South America, including Bermuda, the Bahamas and the West Indies; represented by about 170 species.
3. The fresh waters of North America, east of the Rocky Mountains; represented by about 115 species.
4. The Pacific coast of North America; represented by 15 species from the coast of California.
5. The Pacific coast of Central America; represented by 4 species from Panama.
6. The Pacific coast of South America; represented by 6 species from the coast of Peru.
7. The fresh waters of Northern South America; represented by about 50 species.
8. The Mediterranean; represented by 5 species.
9. The coast of Europe; represented by 6 species.
10. The fresh waters of Europe; represented by 14 species.
11. The Canary Islands and the Northwest coast of Africa; represented by 10 species.
12. The East coast of Africa; represented by 10 species.
13. The coast of Southern Asia and the East Indies; represented by 20 species.
14. The fresh waters of Southern Asia; represented by 5 species.
15. The Sandwich Islands; represented by about 200 species.

There are about 64 species in the collection whose localities are not known; these will eventually be used with others, to show the classification and comparative structure of fishes.

The dry and stuffed specimens have not yet been identified or catalogued, though they are for the present placed in one of the cases in the gallery. The alcoholic specimens not yet catalogued and exhibited are contained in the following lots: — 1st, a collection of about 200 species of Sandwich Islands fishes presented some years since by Dr. C. F. Winslow; 2d, the fresh water fishes of Northern South America; 3d, various small lots from foreign countries; 4th, the collection of 44 species of Cuban Fish purchased the past year by Mr. Scudder, and kindly identified by Prof. Poey; 5th, the collection of several hundred specimens made by the Curator during the past season at the Richardson Lakes, and at Lake Sebago in Maine. These specimens cannot be exhibited, nor

those now on exhibition properly arranged, until more alcohol and bottles can be obtained. The work of cataloguing which has progressed rapidly during the past year, is also hindered from the same cause. At the same time the space at the disposal of the Curator is insufficient for the proper distribution of the fishes in a faunal arrangement, and with the rapid growth of the collection similar to what the past year has witnessed, the opening of one of the unfurnished apartments will soon be, if it is not already, essential. The additions during the past year were over 1,200 specimens, some of which were obtained by purchase, while for the remainder we are indebted to Drs. Bryant, Shaw, Shurtleff and Winslow, Messrs. Bishop, Buck, Dall, Nason, David Pulsifer, Putnam, Snow and Whitten, and to the Lyceum of Natural History in Williams College.

A portion of the collection of Radiates has been placed on exhibition during the past year in the wall cases at the western end of the Hall, and in one of the adjoining ones on the southern side. The Echinoderms have been fully catalogued and arranged, with the exception of those preserved in alcohol, for which no new alcohol or bottles have as yet been provided; among those arranged are the specimens forming the large and valuable collection of Echini presented by Mr. Barnard. Part of the corals have been displayed, but owing to unavoidable circumstances their final arrangement has been delayed, though it will soon be completed. The collection at present is most complete in the order of Echini and in corals, but even in these there are many undesirable deficiencies. The collection of star fishes is still incomplete, even in native species, but we have promise of a series of those found in the Bay of Fundy with their natural colors preserved, from the Museum of Yale College, which have already been selected for us in exchange for some sent by us. Of Holothurians we have but a very meagre collection. A collection embracing 153 specimens and about 60 species, chiefly Echinoderms, has been sent to the Museum of Yale College in exchange. A small collection of corals formerly borrowed by the Curator for study at the Museum of Com-

parative Zoölogy has been returned, fully labelled; most of them were the original types of species described by Prof. Dana. Donations to the number of about 79 specimens have been received from Drs. Kneeland and Winslow, and Messrs. Shurtleff and Willis.

The remaining wall cases of the upper gallery upon the western end of the southern side contain the Crustacea, one the dried preparations and the other the alcoholic specimens. The Curator being absent in the Army is unable to give any report of operations during the past year, though little or nothing has been done. The collection is a small but select one with representatives from all parts of the world, containing a year ago 122 alcoholic specimens and 198 dried preparations. The past year additions have been made of 129 specimens from Dr. Winslow, Capt. Atwood and Messrs. S. Hubbard, S. H. Scudder, C. A. Shurtleff and J. R. Willis.

The Entomological collection has not heretofore been displayed by the Society, having been, up to the present time, arranged in drawers and boxes, totally excluding the light. Now, however, the railing cases of the upper gallery have been devoted to that purpose, and the task of transposition of portions of the collections into the boxes necessary for this method of arrangement has been commenced, and will be vigorously pursued the present year; it is the intention of the Curator to display all of the collection in this manner, except the cabinet of the late Dr. T. W. Harris, which will be kept by itself; this plan will entail a large amount of work simply in the transferrence of the objects, but will undoubtedly be more satisfactory when concluded. The Insects belonging to the Society belong to four different collections, the old collection, the Hentz collection, the Harris Cabinet and that bequeathed during the last year by the late Mr. C. A. Shurtleff. The old collection was principally rich in exotic Lepidoptera (especially the diurnal) and Coleoptera, besides many Orthoptera and Hymenoptera, and was gathered together in the earlier period of the Society's history by the exertions mainly of Drs. Gould and Harris. The catalogues

still extant witness to the great value of the collection. The Hentz collection was purchased of Prof. N. M. Hentz for the sum of $550 by friends of the Society, who subscribed in response to a circular issued by Dr. Harris in 1835. It contained a most choice collection of Coleoptera from all parts of the United States, about 1,500 species in all, catalogued and arranged and accompanied by admirable dissections, copious notes and drawings of characteristic details, and was also very rich in American Hymenoptera. Of these two collections scarcely one fiftieth part remains in a condition fit for any purposes of comparison or identification whatsoever, and almost none which are suitable for public exhibition. The damage done to these collections by the ravages of the Anthrenus, the exposure to dust, and the practice of baking, has been excessive. Some 30 or 40 drawers of specimens appear never to have had a cabinet for their reception; certainly none can now be found, nor have I ever seen a trace of one. Such specimens of these collections as will bear public inspection will be arranged in the systematic collections, and those of which only fragmentary remains can be rescued will be placed for a study collection in drawers. The Harris Cabinet was purchased in 1858, shortly before the Curatorship was offered to the present incumbent. It had previously been carefully scrutinized by Mr. Alexander Agassiz, who selected from the maze of boxes in which a considerable portion of the collection had been placed, such as were worthy of preservation after the exposure they had been subjected to, subsequent to Dr. Harris's death and before they had reached our hands. The arranged collection of United States Insects had, however, received no injury from this cause, having remained in the hands of his family. The injury thus mentioned to all these collections has resulted from the same cause, namely, the want of *constant* care of the objects. There are no objects of Natural History so endangered by destructive insects as Entomological collections. An inspection of the Curators' reports in years past leads the Curator to think that a great part of this injury to the old Society collection and to the Hentz collection occurred not far from the time of the dangerous illness and subsequent death of Dr.

Burnett, the then Curator in charge; he being obliged to leave them while in a state of disorder, when just beginning to arrange them. Thousands of specimens of Dr. Harris's insects which had been stored in the garret of Harvard Library were found destroyed when they came under Mr. Agassiz's supervision, who was able to rescue but about one-fourth part of those which had been put away in that place. The same portion of the collection which was rescued from this fate was again attacked by Anthreni while stored in the rooms occupied by the Society in Bulfinch St. shortly before our removal thence, for they were examined carefully just previous to the Curator's absence from the country a year ago, and were found somewhat infested on his return; and though since that time he has been through the whole collection three times with great care and through parts of it more frequently, and has also been assisted by the skill and patience of Messrs. Smith and Sanborn upon the Coleoptera, he fears that they are not yet wholly free from destroyers. This all shows how great the need is of constant watchfulness; it is as true here, as in medical treatment, that an ounce of prevention is worth a pound of cure.

The Harris Collection comprises from 12,000 to 14,000 specimens and about half the number of species, nearly all from North America. The arrangement initiated with regard to them is to select of every North American species in the collection representatives from every locality, of each sex, and exhibiting every variation discoverable. These are arranged according to the systematic distribution used by him in his own cabinet, so as to be illustrative of his own ideas of their affinities and classification. Each species bears a distinctive number, and every specimen of a species is distinguished from the others by bearing in addition a separate letter, so that any specimen in the collection can be specifically referred to; these numbers refer to a catalogue, distinct from the general catalogue of Insects. In this way most of the Coleoptera were arranged previous to our removal to this building, and since then the work has been completed, and the Orthoptera also gone through with. These two

groups occupy 32 drawers of large size. The arrangement of the other groups will be continued during the year.

The Shurtleff Bequest consists of between five and six thousand pinned insects from the United States and mostly from Massachusetts, a small collection of Chinese and Japanese species, over 700 dry chrysalids and insect products, and more than 2,000 insects in alcohol, many of them of earlier stages of the insects. These, with the duplicates of the Harris Collection are forming the basis of a New England collection, to which the Curator has given as much time as possible, though not so much as he desired owing to the unusual amount of work laid upon him by his other official duties in the Society during the past year. Now that an orderly arrangement has been perfected in every part, he hopes to give more time to it. He has, however, arranged and displayed all of the Orthoptera and diurnal Lepidoptera of the collection belonging to New England, now contained in 17 boxes. The Society is much indebted to Messrs. F. G. Sanborn and George D. Smith for the time and care they have bestowed upon the Coleoptera; these they examined thoroughly, and will completely arrange. They have already, in the course of the past six months, identified, labelled, transferred and arranged for exhibition nearly 1,000 specimens, comprising over 400 species, and occupying 20 of the boxes prepared for the purpose, which, with the other arranged portions of the New England collection, have been displayed in the railing-cases of the second gallery. This is the first thorough arrangement of the Coleoptera attempted for years, and the pains these gentlemen have been at in selecting the specimens from the confused mass of good and bad, and resetting many of those from Mr. Shurtleff's collection which had evidently been the result of his earlier inexperienced collecting, as well as the taste and care displayed in their arrangement, merit the warmest thanks of the Society. When the arrangement of the New England species has been completed, they will follow out a similar plan for the rest of this country, and, if time will permit them, for the rest of the world.

The cases to which the insects are allotted are unfit, in

their present condition, for the preservation of insects on exhibition until they are made, so far as possible, air-tight. Strips of rubber must be placed entirely around the case where the lid meets it, and fastenings must be placed at either end to prevent any springing of the lid; the light, too, is so powerful that it would take but a short time to bleach the highly colored specimens, and some darkening curtain or shutter must be contrived to exclude the light, or other means taken to darken sufficiently the light coming from the lantern roof above.

The additions to this collection during the year have been very important on account of the bequest of Mr. Shurtleff. Including this, they number 10,750 specimens of which 42 are Arachnids and 46 Myriapods. Besides Mr. Shurtleff, the donors have been Drs. S. A. Bemis, H. Bryant, B. S. Shaw, and C. F. Winslow; and Messrs. N. Bishop, W. H. Dall, J. Fairbanks, A. L. Miller, W. L. Parker, J. Robertson, S. H. Scudder and C. J. Sprague; some were obtained by purchase.

The Curator is authorized to say for the gentlemen who have so kindly given him their assistance in the arrangement of the Coleoptera that they are ready, so soon as boxes are provided for them, and the cases are made sufficiently secure to insure the safety of insects deposited there, to supply as many as 1,500 species of Coleoptera from the United States which they will arrange and label carefully; these, with the collection of New England Coleoptera now being arranged by them would occupy nearly one half of the railing cases around the entire upper gallery.

With a few general remarks upon the Museum the Custodian will bring to an end this already too prolonged report.

There is one class of the animal kingdom, that of Worms, which is not at present assigned to any department; there are, to be sure, but few specimens in the collection, but it would be hardly fitting, even were there none, that it should not find a place. It is suggested that they could be most appropriately given to the charge of the Curator of Crustacea.

There are some defects in the arrangements of the building

which ought certainly to be remedied; one, of which two of the Curators have spoken, is that of the excessive light on all days, three only of the windows having shades; these are upon the west end of the main hall and are absolutely essential for the protection of the birds; hardly less important is it for the preservation of the collection for any length of time that the windows of the lantern-roof should be shaded upon all days when the Museum is not open, so as to darken the room as much as it is possible; indeed it would be well if the room could be thoroughly darkened, but unless some protection from the glare of light is given to some of the collections, especially those of Ornithology and Entomology, they will be seriously injured. Another thing that is necessary is the providing the railing cases of the gallery with iron-rod-railings, slightly elevated. So long as the cases are at their present height, the glass will be in continual danger of breakage by visitors who carelessly lean upon it. Several panes have already been broken in that way, and they will doubtless continue to be broken, and injure or destroy the specimens beneath, unless this precaution is taken. The fastenings to the larger cases prove to be very defective; the shrinkage of the doors is constantly rendering them useless or troublesome, and a very considerable sum has already been expended in repeated repairs; they cannot accomplish the object for which they were designed, and should be replaced by locks of some more substantial character, as a safeguard to the collections.

One great hindrance to the arrangement of many of the collections is the want of alcohol, which we are now obliged to pay for at ten times the former price and therefore can use but sparingly. It is believed that this difficulty may be obviated by proper petition to Congress, so that, as in England, methyllated spirits may be used free from the excise, which is almost the only cause of the extravagant price; and steps have been taken which it is hoped may secure a favorable result.

This review of the operations of the past year warrants the Custodian in congratulating the Society upon what it has accomplished during that period, and on the present

generally satisfactory state of its affairs; still more, however, upon the brilliant prospects which open before it, if their reasonable expectations be realized; for, so large a ratio does the bequest of our distinguished Patron bear to the funds upon the basis of which the Society has prospered the past year, that it evidently must have a prominent and permanent effect upon the workings of our Institution, not simply in the expanding of the appliances now in force, but even, perhaps, in considerable changes in its modes of administration. With this thought uppermost in our minds and inspiring our action, we may be permitted to express our most confident hope and declare our resolute determination that this Society shall hereafter act even a more prominent part than in the past, in the development of the Natural Sciences in America.

Appendix A.

1. SUBSCRIBERS TO THE BUILDING FUND.

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Francis Alger.
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Holmes Ammidown.
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Misses M. and A. Wigglesworth.
H. W. Williams, M.D.
J. Huntington Wolcott.
Jeffries Wyman, M.D.

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2. SUBSCRIBERS TO THE WALKER FUND.

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A. A. Lawrence.
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Henry Lee.
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Giles H. Lodge, M.D.
Charles Lord.
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John J. May.
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Hugh Montgomery.
William Mountford.
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Misses M. and A. Wigglesworth.
Thomas Wigglesworth.
J. Huntington Wolcott.
Edward Wyman.

Appendix B.

WALKER PRIZES.

The following prizes were founded by the late Dr. William J. Walker, for the best memoirs, and in the English language, on subjects proposed by a committee appointed by the Council of the Society. The first and second are to be awarded annually; the third once in five years, beginning 1870.

First — For the best memoir presented, a prize of sixty dollars may be awarded. If, however, the memoir be one of marked merit, the amount awarded may be increased to one hundred dollars, at the discretion of the committee.

Second — For the next best memoir, a prize not exceeding fifty dollars may be awarded at the discretion of the committee; but neither of the above prizes shall be awarded unless the memoirs presented shall be deemed of adequate merit.

Third — Grand Honorary Prize. The Council of the Society may award the sum of five hundred dollars for such scientific investigation or discovery in natural history as they may think deserving thereof; provided such investigation or discovery shall have first been made known and published in the United States of America; and shall have been, at the time of said award, made known and published at least one year. If in consequence of the extraordinary merit of any such investigation or discovery, the Council of the Society should see fit, they may award therefor the sum of one thousand dollars.

Subject of the Annual Prize for 1865–6. "Adduce and discuss the evidences of the co-existence of man and extinct animals, with the view of determining the limits of his antiquity."

Subject for 1866–7. "The fertilization of plants by the agency of insects, in reference both to cases where this agency is absolutely necessary, and where it is only accessory;" the investigations to be in preference directed to indigenous plants.

Memoirs offered in competition for the above prizes must be forwarded on or before April first, prepaid and addressed

"*Boston Society of Natural History,*
for the Committee on the Walker Prizes,
Boston, Mass."

Each memoir must be accompanied by a sealed envelope enclosing the author's name, and superscribed by a motto corresponding to one borne by the manuscript.

Boston, May, 1865.

Appendix C.

LIST OF THE OFFICERS FOR 1864–5.

President.
Jeffries Wyman, M.D.

Vice-Presidents.
Charles T. Jackson, M.D., Augustus A. Gould, M.D.

Corresponding Secretary.
Samuel L. Abbot, M.D.

Recording Secretary.
Samuel H. Scudder.

Treasurer.
Thomas T. Bouvé.

Librarian.
Samuel H. Scudder.

Custodian.
Samuel H. Scudder.

Curators.

Thomas T. Bouvé,	*Of Geology and Palæontology.*
Charles J. Sprague,	*Botany.*
Thomas M. Brewer, M.D.,	*Oölogy.*
Henry Bryant, M.D.,	*Ornithology.*
F. W. Putnam,	*Ichthyology.*
James C. White, M.D.,	*Mammalogy and Comparative Anatomy.*
Samuel H. Scudder,	*Entomology.*
B. Joy Jeffries, M.D.,	*Microscopy.*
Francis H. Brown, M.D.,	*Herpetology.*
Charles Pickering, M.D.,	*Ethnology.*
William T. Brigham,	*Mineralogy.*
Alpheus Hyatt,	*Conchology.*
A. S. Packard, Jr.,	*Crustacea.*
A. E. Verrill,	*Radiata.*

Appendix D.

LIST OF SOCIETIES, ETC., TO WHOM OUR PUBLICATIONS ARE SENT.

Albany Institute	Albany.
New York State Library	"
Berwickshire Naturalists' Club	Alnwick.
Naturforschende Gesellschaft des Osterlandes	Altenburg.
Genootschap Natura Artis Magistra	Amsterdam.
Koninklijke Akademie van Wetenschappen	"
Société Paléontologique de Belgique	Anvers.
Naturhistorischer Verein	Augsburg.
Maryland Academy	Baltimore.
Naturforschende Gesellschaft	Bamberg.
Naturforschende Gesellschaft	Basel.
Bataviaasch Genootschap van Kunsten en Wetenschappen	Batavia.
Natuurkundige Vereeniging in Nederlandsch Indie	"
Natural History and Philosophical Society	Belfast.
Bergens Museum	Bergen.
Archiv für Anatomie, Physiologie, und wissenschaftliche Medicin	Berlin.
Archiv für Naturgeschichte	"
Deutsche Geologische Gesellschaft	"
Entomologischer Verein	"
Gesellschaft für Erdkunde	"
Königlich-Preussische Akademie der Wissenschaften	"
Verein für Beförderung des Gartenbaues	"
Naturforschende Gesellschaft	Bern.
Naturwissenschaftlicher Verein des Harzes	Blankenberg.
Imperial Regio Istituto Geologico	Bologna.
Reale Accademia delle Scienze	"
Bombay Geographical Society	Bombay.
Royal Asiatic Society	"
Naturhistorischer Verein des Preussischen Rheinlandes	Bonn.
Académie Impériale des Sciences, Belles-Lettres et Arts	Bordeaux.
Société des Sciences Physiques et Naturelles	"
Société Linnéenne	"
American Academy of Arts and Sciences.	Boston.
Boston Medical and Surgical Journal	"
Horticultural Society	"
Kön. Kais. Maerisch-Schlesische Gesellschaft für Beförderung des Akerbaus, der Natur und Landeskunde	Brünn.
Naturforschender Verein.	"
Académie Royale des Sciences, des Lettres et des Beaux-Arts	Bruxelles.
Société Entomologique de Belgique	"
Académie Royale des Sciences, Arts et Belles-Lettres	Caen.
Société Linnéenne de Normandie	"
Agricultural and Horticultural Society of India	Calcutta.

Asiatic Society of Bengal	Calcutta.
Geological Survey of India	"
Cambridge Philosophical Society	Cambridge, Eng.
Harvard Natural History Society	" Mass.
Museum of Comparative Zoölogy	" "
Journal für Ornithologie	Cassel.
Accademia Gioenia di Scienze Naturali	Catania.
Société Impériale des Sciences Naturelles	Cherbourg.
Elliott Society of Natural History	Charleston.
Kongelige Norske Frederiks Universitet	Christiania.
Naturforschende Gesellschaft Graubündtens	Chur.
Naturforschende Gesellschaft	Danzig.
Mittelrheinischer Geologischer Verein	Darmstadt.
Académie Impériale des Sciences, Arts et Belles-Lettres.	Dijon.
Archiv für die Naturkunde, Lief- Est- und Curlands	Dorpat.
Kais. Leopoldinisch-Carolinische Deutsche Akademie der Naturforscher	Dresden.
Naturwissenschaftliche Gesellschaft, Isis	"
Dublin Botanical Society	Dublin.
" Quarterly Journal of Science	"
" University Philosophical Society	"
Natural History Society	"
Royal Dublin Society	"
" Geological Society of Ireland	"
" Irish Academy	"
University Zoölogical and Botanical Association	"
Royal Scottish Society of Arts	Edinburgh.
Royal Society of Edinburgh	"
Naturforschende Gesellschaft	Emden.
Senckenbergische naturforschende Gesellschaft	Frankfurt a. M.
Zoologische Gesellschaft	"
Naturforschende Gesellschaft	Freiburg.
Société de Physique et d' Histoire Naturelle	Genève.
Oberhessische Gesellschaft	Giessen.
Naturforschende Gesellschaft	Görlitz.
Königliche Gesellschaft der Wissenschaften	Göttingen.
British Association for the Advancement of Science	Great Britain.
Hollandsche Maatschappij der Wetenschappen	Haarlem.
Real Sociedad Economica de Amigos del Pais	Habana.
Nova Scotian Institute of Natural Science	Halifax, N. S.
Linnaea, ein Journal für die Botanik in ihrem ganze Umfange	Halle.
Naturwissenschaftlicher Verein	"
Naturwissenschaftliche Gesellschaft	Hamburg.
Naturwissenschaftlicher Verein	"
Naturhistorische Gesellschaft	Hannover.
Naturhistorisch-Medicinischer Verein	Heidelberg.
Finska Vetenskaps Societeten	Helsingfors.
Siebenbürgischer Verein für Naturwissenschaften	Hermannstadt.
Provinciaal Genootschap van Kunsten en Wetenschappen	Hertogenbosch.
Tasmania Royal Society	Hobarttown.
Asiatic Society of China	Hong Kong.

Royal Hawaiian Agricultural Society	Honolulu.
Ferdinandeum	Innsbruck.
Imper. Kazanskii Universitet	Kazan.
Jamaica Society of Arts	Kingston.
Det Kongelige Danske Videnskabernes Selskab	Kjobenhavn.
Kongelige Nordiske Oldskrift Selskab	"
Naturhistorisches Landesmuseum von Kaernten	Klagenfurt.
Kön. Physikalisch-Ökonomische Gesellschaft	Königsberg.
Société Entomologique des Pays-Bas	La Haye.
Geological and Polytechnic Society of the West Riding of Yorkshire	Leeds.
Philosophical and Literary Society	"
Academia Lugduno-Batava	Leyden.
Nederlandsche Entomologische Vereeniging	"
Königlich Saechsische Gesellschaft der Wissenschaften	Leipzig.
Zeitschrift für wissenschaftliche Zoologie	"
Société d'Agriculture, Sciences et Arts de la Sarthe	Le Mans.
Société Royale des Sciences	Liège.
Société des Sciences, d'Agriculture et des Arts	Lille.
Academia Real das Sciencias	Lisboa.
Literary and Philosophical Society	Liverpool.
Liverpool Royal Institution	"
Museum Francisco-Carolinum	Linz.
Annals and Magazine of Natural History	London.
Entomological Society	"
Entomologist's Weekly Intelligencer	"
Ethnological Society	"
Geological Society	"
India Museum	"
Journal of Entomology	"
Linnæan Society	"
London, Edinburgh and Dublin Philosophical Magazine	"
Microscopical Society	"
Museum of Practical Geology and Geological Survey	"
Natural History Review	"
Palæontographical Society	"
Royal Agricultural Society of England	"
" Geographical Society	"
" Horticultural Society	"
" Institution of Great Britain	"
" Society	"
The Athenæum	"
" Ibis	"
" Reader	"
" Zoölogist	"
Zoölogical Society	"
Naturwissenschaftlicher Verein.	Luneburg.
Société des Sciences Naturelles du Grand-Duché de Luxembourg	Luxembourg.
Académie Impériale des Sciences, Belles-Lettres et Arts	Lyon.

Société d' Agriculture, d' Histoire Naturelle et des Arts Utiles	Lyon.
Société Linnéenne	"
Wisconsin Natural History Society	Madison, Wis.
Literary Society and Auxiliary of the Royal Asiatic Society	Madras.
Academia Real de Ciencias	Madrid.
Literary and Philosophical Society	Manchester.
Mannheimer Verein für Naturkunde	Mannheim.
Gesellschaft für Beförderung der Gesammten Naturwissenschaften	Marburg.
Philosophical Institution of Victoria	Melbourne.
Société d' Histoire Naturelle du Départment de la Moselle	Metz.
Zeeuwsch Genootschap der Wetenschappen	Middleburg.
Imperiale Regio Istituto Lombardo di Scienze, Lettere ed Arti	Milano.
Museo dei Fratelli Villa	"
Società Italiana di Scienze Naturali	"
Società Italiana delle Scienze	Modena.
Société des Sciences, des Arts et des Lettres du Hainault	Mons.
Académie des Sciences et Lettres	Montpellier.
Canadian Naturalist and Geologist	Montreal.
Geological Survey of Canada	"
Société Impériale des Naturalistes	Moscou.
Königlich Bayerische Akademie der Wissenschaften	München.
Königlich Hof-und-Staatsbibliothek	"
Real Accademia delle Scienze e Belle Lettere	Napoli.
Verein der Freunde der Naturgeschichte in Mecklenburg	Neubrandeburg.
Société des Sciences Naturelles	Neuchâtel.
Die Pollichia zu Dürkheim a. H. Rheinpfalz	Neustadt.
American Journal of Science and Arts	New Haven.
Lyceum of Natural History	New York.
Naturhistorische Gesellschaft	Nurnberg.
Obshtshestvo Seljskago Khozjaistva Juzhnoi Rossii	Odessa.
Offenbach Verein für Naturkunde	Offenbach am Main.
Ashmolean Society	Oxford.
Imperiale Regia Accademia di Scienze, Lettere, ed Arti	Padova.
Accademia delle Scienze e belle Lettere	Palermo.
Reale Istituto d' Incoraggiamento di Agricoltura, Arti, e Manifatture in Sicilia	"
Académie Impériale des Sciences	Paris.
École des Mines	"
Journal de Conchyliologie	"
Ministère de la Marine	"
Muséum d' Histoire Naturelle	"
Revue de Sériciculture Comparée	"
Revue et Magazin de Zoologie	"
Société de Géographie	"
" des Antiquaires de France	"
" Entomologique de France	"
" Géologique de France	"

Société Impériale et Centrale d' Agriculture . . .	Paris.
" Impériale Zoologique d' Acclimatation . .	"
Royal Geological Society of Cornwall	Penzance.
Academy of Natural Sciences	Philadelphia.
American Philosophical Society	"
Society of Natural History	Portland.
Königlich Boehmische Gesellschaft	Prag.
Lotos, Zeitschrift für Naturwissenschaften . . .	"
Kön. Kais. Patriot-Okonomische in Böhmen . . .	"
Verein für Naturkunde	Presburg.
Literary and Historical Society.	Quebec.
Correspondenzblatt für Sammler von Insekten. . .	Regensburg.
Kön. Bayerische Botanische Gesellschaft	"
Zoologisch-Mineralogischer Verein	"
Naturforschender Verein	Riga.
Bataavsch Genootschap der Prœfondervindelijke Wijsgeeberte	Rotterdam.
St. Gallische Gesellschaft	St. Gallen.
Natural History Society of New Brunswick . . .	St. Johns, N. B.
Académie Impériale des Sciences	St. Pétersbourg.
Bibliothèque Impériale Publique	"
État Major du Corps des Ingénieurs des Mines de Russie	"
Gidrographitsheskii Departament Morskago Ministerstva	"
Imper. Russkoe Geographitsheskoe Obshtshestvo . .	"
Russisch-Kaiserliche Mineralogische Gesellschaft . .	"
Société Entomologique de Russie	"
Essex Institute	Salem, Mass.
Kön. Kais. Landwirthschaft Gesellschaft	Salzburg.
California Academy of Natural Sciences	San Francisco.
Universidad de Chile.	Santiago.
Skandinaviske Naturforskeres Forsamling . . .	Scandinavia.
Entomologischer Verein	Stettin.
Bureau de la Recherche Géologique de la Suède . .	Stockholm.
Kongliga Svenska Vetenskaps Akademien . . .	"
Société d' Histoire Naturelle	Strasbourg.
Deutsche Ornithologe Gesellschaft	Stuttgart.
Verein für Vaterländische Naturkunde	"
Schweizerische Entomologische Gesellschaft . . .	Switzerland.
Société Vaudoise des Sciences Naturelles. . . .	"
Königlich Saechsische Akademie für Forst-und Landwirthe	Tharand.
Reale Accademia delle Scienze.	Torino.
Canadian Institute	Toronto.
Académie des Sciences, Inscriptions et Belles-Lettres .	Toulouse.
Kongliga Vetenskaps Societeten	Upsala.
Provinciaal Utrechtsch Genootschap van Kunsten en Wetenschappen	Utrecht.
Istituto Veneto di Scienze, Lettere ed Arti . . .	Venezia.
Accademia d' Agricoltura, Commercio ed Arti . .	Verona.
Smithsonian Institution	Washington, D. C.
Kaiserliche Akademie der Wissenschaften . . .	Wien.

Kön. Kais. Central-Anstalt für Meteorologie und Erdmagnetismus	Wien.
Kön. Kais. Geologische Reichsanstalt	"
Kön. Kais. Zoölogisch-Botanische Gesellschaft	"
Wiener Entomologische Monatschrift	"
Verein für Naturkunde	Wiesbaden.
American Antiquarian Society	Worcester, Mass.
Würzburger naturwissenschaftliche Zeitschrift . .	Würzburg.
Naturforschende Gesellschaft	Zurich.

Appendix E.

TARIFF OF PRICES FOR THE PUBLICATIONS OF THE SOCIETY.

Journal.

Vol. I., in parts, $6.50.
" II., " 6.50.
" VI., " 6.00.
" VII., " 6.50.

The parts separately at the following prices.

Vol. I., part 2, $2.00; part 3, $1.50.
" II., part 1, $2.00; part 2, $2.00; parts 3–4, $3.00.
" IV., part 3, $1.50; part 4, $1.50.
" V., part 1, $1.75.
" VI., part 1, $1.75; part 2, $1.50; part 3, $1.75; part 4, $1.25.
" VII., part 1, $2.50; part 2, $1.75; part 3, $1.50; part 4, $1.25.

Proceedings (in sheets).

Vol. II., $3.25.
" III., 2.00.
" IV., 2.00.
" V., 2.25.
" VI., 2.00.
" VII., 2.00.
" IX., 2.50.

Subscription price Vol. X., $3.00 to members; $4.00 to the public.

Memoirs.

Subscription price per part, $3.50 to members; $4.00 to the public.

TREASURER'S REPORT.

Thos. T. Bouvé, Treasurer, in account with the Boston Society of Natural History.

Dr.

1864. April 30.	To Balance of Cash on hand at date	$4,118.19
1865. April 30.	" Cash received during past year, as follows:	
	Subscription to the Walker Fund	33,405.00
	Boston City Stock sold	8,396.99
	Return of amount temporarily loaned	905.00
	Interest on temporary loan	14.00
	State of Massachusetts, return of loans	57,105.00
	City of Boston, return of loan	4,000.00
	Trustees of Courtis Fund, borrowed of them	8,339.71
	Income from Courtis Fund	436.33
	Share of Income from Walker Fund to date, one-half	613.48
	Life Membership	100.00
	Special Donation	100.00
	Annual Assessments	1,010.00
	Admission Fees	150.00
	General Expenses, Sundries sold, etc.,	12.06
	Journal and Proceedings, Publications	197.97
	Library, received from Books sold	646.78
		$119,550.51
	Balance due to the Treasurer on date	397.05
		$119,947.56

Cr.

1865. April 30.	By Cash paid as follows:	
	New Building, paid on this account	$10,022.25
	Furniture for New Building, Cases, etc.	2,504.87
	Journal and Proceedings	129.04
	General Expenses	3,014.38
	Cabinet	838.32
	Library, paid on this account	71.89
	Loaned temporarily	905.00
	State of Massachusetts, Loans to State	57,105.00
	City of Boston, Loaned them	4,000.00
	Bills Receivable, Loaned on Notes secured by Mortgages, being the whole amount of Walker Fund	41,105.00
	Interest paid on this account	251,81
		$119,947.56

Errors Excepted.

THOS. T. BOUVÉ, Treasurer.

Boston, April 30, 1865.

DR. THOS. T. BOUVÉ, TREASURER, IN ACCOUNT WITH THE "WALKER FUND" OF THE BOSTON SOCIETY OF NATURAL HISTORY. CR.

1864.			1865.		
Dec. 29.	To Cash received 2 months 26 days on $905.00 temporarily loaned . . .	$12.97	March	By Cash paid E. S. Morse for labels for specimens	$9.44
1865.				" paid C. Richardson & Co. for Benzine, Creosote, etc. . . .	3.32
Jan. 28.	" received, Interest on $4,000 loaned to the city July 28th last . .	120.00		" paid repairs Skylight . . .	16.08
	" received, Interest on $16,000 loaned to State June 25th last, 5 per cent. until July 27th, 6 per cent. July 27th to date	556.90		" paid Wood & Chester for Bird-stands	30.00
				" paid Moses French for Coal . .	324.33
				" paid Prescott & Chapin for Coal .	64.12
				" paid C. Graves for Alcohol . .	19.25
March 1.	" received, Interest on $20,000 loaned the State Nov. 22d last, 6 per cent.	325.48		" paid and transferred to the General Accounts of the Society, one-half of all Income received to date .	613.48
April 8.	" received, Interest on $21,105 from Jan. 28th to March 1st, and on $16,105 from March 1st to date, 6 per cent.	211.62			$1,080.02
			April 30.	By Balance on date to new account . .	146.95
		$1,226.97			$1,226.97

Errors Excepted.

THOS. T. BOUVÉ, Treasurer.

Boston, April 30, 1865.

Dr. Thos. T. Bouvé, Treasurer, in account with the Bulfinch Street Estate. Cr.

1864. October.	To Cash received of Mrs. E. N. Clarke, for rent of House and Barn one year from Oct. 14th, 1864, to Oct. 14th, 1865, in advance . . .	$940.00	1864. October.	By Cash paid J. Jeffries, Jr., for advertising Estate to let, and for Revenue Stamps to Lease . . .	$16.37
1865. April 30.	" received of Mrs. E. N. Clarke, for one-half amount tax for 1864, as agreed upon	133.00	Nov. 23.	" paid City and State Tax for year, one-half of which is to be repaid by Mrs. Clarke per agreement .	266.00
			1865. Feb. 7.	" paid D. Tillson for Slating . .	44.02
			March.	" paid Neptune Ins. Co., for Insurance on Building	15.00
		$1,073.00			$341.39
			April 30.	" Balance on date to new account .	731.61
					$1,073.00

Errors Excepted.

THOS. T. BOUVÉ, Treasurer.

Boston, April 30, 1865.

It will be perceived that there is in the hands of the Treasurer, in account with the Walker Fund, a balance of $146.95
In his hands in acc't with the Bulfinch St. Estate . . 731.61

Together, . . $878.56
And that there is a balance due him on general acc't of . 397.05

Making the actual balance in his hands $481.51
of all the acc'ts rendered.

NEW BUILDING AND CASES.

The full cost of our New Building, including commissions for architectural services, and not including the cases, has been $94,393.80
The cases, including architect's commissions, have cost 10,003.36

Making together . . $104,397.16

A result with which the Society certainly has reason to be gratified, as such a building, with the cases, could not now be built for a sum less than one hundred and fifty to one hundred and sixty thousand dollars.

PROPERTY OF THE SOCIETY.

As Treasurer of the Society I reported the property May 1st, 1862, as worth, exclusive of the Library and Cabinet, . . $85,001.49
May 1st, 1863, it was valued at 133,497.80
May 1st, 1864 it was valued at 142,512.47
and now, May 1st, 1865, it sums up 176,881.51

This consists of

The Estate in Bulfinch Street . . .		$30,000.00	
Courtis Fund		10,000.00	
New Building		94,393.80	
Furniture		10,095.05	
Balance due on unsettled account . .		24.42	
Walker Fund		41,105.00	
		$185,618.27	
Less due to Trustees of Courtis Fund, borrowed,	$8,339.71		
And to the Treasurer . .	397.05	8,736.76	
			$176,881.51

This is, as stated above, exclusive of Library and Cabinet. I will not undertake to estimate the value of our property in the estate of our late benefactor, Dr. Wm. J. Walker. It suffices me to know that in resigning the office of Treasurer, I leave to my successor the pleasing task of showing on our next anniversary means of usefulness beyond what our most sanguine anticipations could have looked for.

With regard to the income that can be depended upon from our present property and from assessments on members, &c., I present the following as approximate results:

From Estate Bulfinch Street	$1,000
" Assessments on members	1,000
" Courtis Fund (note of $3,000)	180
" Walker Fund (notes of $41,105)	2,466
" Admission fees of new members	200
Making in all	$4,846
Of this, however, one half of the income from the Walker fund is not available for general purposes. Deduct this	1,233
And we have for general purposes	$3,613

Our expenses as we are now going on may be estimated as follows:

Custodian and Janitor	$1,500
Other help	200
Stationery, printing, cards, &c.	300
Expressage, transportation, &c.	100
Coal, &c.	500
Gas and Water	100
Insurance	75
Repairs	200
Sundries not mentioned	200
Making	$3,175

This, of course, is a rough estimate, and the actual amount may be less or more according as economy is regarded. Allowing our receipts and expenditures to be as indicated, there would be something, say $500 left for publications and purchase of specimens. This is all based, however, upon circumstances being much as at present, our house in Bulfinch Street let and no change in management. Of course, with the expected accession of wealth and the projected changes in our operations these figures may have but little value.

The one half of the Walker Fund not available for general purposes, may in part be used for a portion of the estimated expenses above, but probably not enough of it to vary essentially the result.

CONDITION AND DOINGS

OF THE

BOSTON SOCIETY OF NATURAL HISTORY

AS EXHIBITED BY THE

ANNUAL REPORTS

OF THE

CUSTODIAN TREASURER, LIBRARIAN AND CURATORS.

MAY, 1866.

BOSTON:
PRINTED FOR THE SOCIETY.
1866.

REPORT OF THE CUSTODIAN

OF THE

BOSTON SOCIETY OF NATURAL HISTORY,

EMBODYING THE REPORTS OF THE LIBRARIAN AND CURATORS
OF THE SEVERAL DEPARTMENTS,

FOR 1865-6.

The past year of the Society has been characterized by much activity in the increase and arrangement of the different departments of the Museum. While the meetings have been well attended, it is believed that the communications presented fully equal in number and interest those of former years. The first number of the Memoirs and nearly a volume of the Proceedings have been printed, and the additions to the Library have been large and of unusual importance. In the Museum the ornithological collection has been more than quadrupled, so that it has now become one of the most important in the country, and unrivalled in the number of type specimens of European authors which it contains; many native species of marine invertebrates and of the lower order of plants in which the Museum has before been deficient, have been added.

In the month of May was closed a series of lectures on scientific topics, given gratuitously, under the auspices of the Society, to the teachers of the Public Schools of Boston and vicinity, which was received with great favor by the public, the large main hall of the Museum being crowded to overflowing on successive Saturdays by very appreciative audiences, who gave ample assurances that repetitions of the undertaking would prove very acceptable.

There have been twenty stated meetings of the Society, and eight meetings of the Microscopic Section. The average attendance of the meetings of the general Society has been thirty-four members, and of the Microscopic Section, nine members.

At these meetings, thirty-six communications have been presented, as follows:

May 17, 1865.

CHARLES A. WHITE, M. D. Observations on the genus *Belemnocrinus*.

June 21, 1865.

Capt. N. E. ATWOOD. On the habits of the Halibut.

July 5, 1865.

A. A. GOULD, M. D. The Nudibranchiate Mollusks of New England.

September 20, 1865.

Prof. J. WYMAN. On the formation of Ripple Marks.

S. H. SCUDDER. Notes upon some *Odonata* from the Isle of Pines.

October 4, 1865.

B. G. WILDER, M. D. On the *Nephila plumipes Koch?* its habits, and a new method of obtaining its silk.

S. H. SCUDDER. Notes on some White Mountain *Odonata*.

A. S. PACKARD, JR., M. D. Observations on the Drift Phenomena of Labrador and Maine.

October 18, 1865.

A. AGASSIZ. On the Development of the *Porcellanidæ*.

B. G. WILDER, M. D. On an imperforate ear in a Negro.

Prof. H. J. CLARK. The Anatomy and Physiology of the Vorticellidan Parasite (*Trichodina pediculus* Ehr.) of Hydra.

November 1, 1865.

C. T. JACKSON, M. D. Account of a Journey to California and Nevada.

H. MANN. On the recent Eruptions of Kilauea and Mauna Loa.

November 15, 1865.

Prof. H. J. CLARK. On the Vestibular Lash of one of the *Vorticellidæ*.

H. MANN. On the Denudation observed in the Hawaiian Islands.

Prof. J. WYMAN. Accounts of some irregularities noticeable in the cells of the Hive Bee.

December 6, 1865.

Prof. W. P. BLAKE. Notice of an earthquake occurring at San Francisco, Cal., and vicinity, Oct. 8th, 1865.

A. AGASSIZ. On the Development of *Limulus*.

N. S. SHALER. Preliminary Notice of some opinions concerning the mode of Elevation of Continental Masses.

F. W. PUTNAM. On the Ichthyological Fauna of the Great Lakes of America.

December 20, 1865.

Prof. H. D. ROGERS. On the Pleistocene Climate of Europe.

January 3, 1866.

H. BRYANT, M. D. A List of Birds from Porto Rico presented to the Smithsonian Institution by Messrs. Robert Swift and George Latimer, with descriptions of new species or varieties.

Prof. A. E. VERRILL. On the distribution of Birds in the United States, with reference to the physical causes that determine their limits in latitude.

On a new preservative fluid, and on the morphology of the eye of insects.

J. C. WHITE, M. D. Description of two Crania from California.

Rev. S. WEIZ. A list of the Vertebrates of Labrador; with annotations by A. S. Packard, Jr., M. D.

February 7, 1866.

A. S. PACKARD, JR., M. D. Observations on the development and position of the *Hymenoptera*, with notes on the Morphology of Insects.

February 21, 1866.

N. S. SHALER. On the modification of Ocean Currents in successive geological periods. Part First.

A. HYATT. On the Morphology of the Shell of Mollusca.

March 7, 1866.

Prof. W. DENTON. On a new Bitumen from rocks of probable miocene age in Utah.

A. A. HAYES, M. D. Description and Analysis of a new kind of Bitumen.

April 4, 1866.

H. MANN. Description of some new species of the genus *Schiedea*, and of a new allied genus.

Revision of the Rutaceæ of the Hawaiian Islands.

C. T. JACKSON, M. D. Chemical analyses of minerals associated with the Emery of Chester, Mass.

Capt. N. E. ATWOOD. On the habits of the Haddock.

April 18, 1866.

Prof. A. E. VERRILL. A Review of the Polyps and Corals of Panama and vicinity, with descriptions of eleven new species of Corals.

On the Polyps and Echinoderms of Long Island Sound, with descriptions of two new species of a new genus.

During the year the Society has elected eleven Corresponding Members and forty-four Resident Members.

The Society having again resumed publication, the first Part of Volume I. of the Memoirs, is now ready for distribution, and nearly one half of Volume X. of the Proceedings, including the records of the meetings held during 1864 and 1865, have been printed, and issued. There are now two hundred subscribers to the Proceedings, and one hundred and seventy-four to the Memoirs. Still more, at least one hundred, are needed to make these journals self-sustaining.

It will be seen by the reports of the Librarian and several Curators, that the additions this year have, in certain departments, been of much importance, while the total number of specimens presented, amounts to 14,000. The collection of birds, especially, has been increased to three times its former size, while its real value has been enhanced in a much greater proportion, by the liberality of the Curator of Ornithology in presenting to the Society a series of birds which formed the largest private collection in Europe. By the addition of this most extensive collection, which was made by Count Lafresnaye, an accomplished ornithologist, and which comprises nearly nine thousand specimens of mounted birds, the Society's Collection has now become one of national importance, and invaluable for reference to our working ornithologists.

In order to suitably arrange this immense collection, the two west rooms on the third story have been fitted up for their reception under the superintendence of a committee, consisting of Drs. J. C. White and H. Bryant. An entirely new arrangement of this department is to be made, as the previous collection is to be merged with that of Lafresnaye. All the birds are to be removed from the eastern end of the gallery, where they are at present, and the space thus made vacant by opening the new rooms, will be taken up by the collection of fishes to be removed from the gallery above. This arrangement will be soon completed, when the galleries, now temporarily closed to the public, will be reöpened. For several months past, two taxidermists have been employed upon the collection.

The Acting Librarian presents the following summary of additions by volume, parts of volumes and pamphlets, stating that of the number of books now in the library—there are 7,622 volumes, 2,097 parts of volumes, and 2,462 pamphlets:

	8vo.			4to.			folio.			
	vls	pts	ph	vls	pts	ph	vls	pts	ph	To'l
Books presented by individuals	33	5	75	9	4	5		2		136
" purchased	13	26		7						46
" deposited by the Republican Institution	32									32
" received in exchange for our publications	141	291	45	121	52	4	1	112		767
Total .										981

In answer to the special requests sent out a year ago to the Societies in Europe with whom we are in exchange, for the back volumes of their publications wanting in our series, and also by the renewed application, both in person and by letter, of the Librarian, a most valuable series has already been received. Other important Societies promise to transmit additional series of desiderata.

All these parcels have been transmitted through the Smithsonian Institution at Washington, to which the Society is specially indebted for this unusual tax on its resources.

In response to a circular letter sent out through the medium of the Smithsonian Institution early in the year, and also to letters recently written, both in French and German, and sent out from Paris and Berlin through the agents of the Smithsonian Institution in those cities, by the Secretary while abroad, the following Societies, being twenty-nine in addition to those in the previous annual list, have entered into a permanent exchange of publications, some of which have already been received and placed on the shelves.

Geological Magazine	London.
Entomological Society of New South Wales	Melbourne.
Reale Istituto Tecnico di Palermo	Palermo.
Société de Biologie	Paris.
Société des Sciences Physiques et Naturelles du Département d'Ille et-Vilaine	Rennes.
Civico Museo Ferdinando Massimiliano in Trieste	Trieste.
Historischer Verein in Mittelfranken	Anspach.
Cercle Artistique, Littéraire et Scientifique d'Anvers	Anvers.
Société Académique d'Archéologie, Sciences et Arts du Département de l'Oise	Beauvais.
Massachusetts Agricultural Department	Boston.
Museo Pub'ico de Buenos Aires	Buenos Aires.
Buffalo Society of Natural Science	Buffalo.
Chicago Academy of Sciences	Chicago.
Videnskabs Selskab i Christiania	Christiania.
Société d'Histoire Naturelle de Colmar	Colmar.
Gesellschaft für Erdkunde	Dresden.
Botanical Society	Edinburgh.
Royal Physical Society	"
Society of Antiquaries of Scotland	"
Institut National Genevois	Genève.
Versammlung Deutscher Naturforscher und Ärzte	Germany.
Glasgow Philosophical Society	Glasgow.
Repertorio Fisico-Natural de la Isla de Cuba	Habana.
Botanical Society of Canada	Kingston, C. W.
Derby Museum	Liverpool.
Geological Society	"
Historic Society of Lancashire and Cheshire	"
Anthropological Society	London.
Ethnological Journal	"

Good progress has been made in cataloguing the pamphlets, though they have not yet been placed upon the shelves. There is an urgent necessity for having an alcove catalogue made, especially felt when the annual account of stock is taken, so as to ascertain what books, if any, are

missing. During the past year, Freycinet's Voyage round the World, and No. 12 of the Natural History Review have been taken from the room and not returned.

By the will of Huntington F. Wolcott, one of the younger members of the Society, the Library has now a fund of $5000 for its increase, and his name has been placed over one of the alcoves in acknowledgment of this liberal bequest.

The Council have voted $100 (gold) for the purchase of volumes wanted to fill up vacancies in the foreign serials, and since have authorized the Librarian, while abroad, to purchase books to the amount of $200.

The number of persons who have taken out books during the year is 70; the number of books taken out is 432.

The Curator of Geology and Palæontology reports the condition of the cabinet under his charge to be good, the specimens being mostly labelled, and well arranged for display and study. It has been increased the past year by donations from many parties, some of which are of great value. Among these may be particularly designated that of the large cast of the *Schistopleurum typus* from the Pampean deposits of South America, by Mr. Martin Brimmer; and of a large collection of Fossils, mostly from the upper Missouri, by the Smithsonian Institution.

To Dr. C. F. Winslow, Mr. T. G. Bancroft, Dr. C. T. Jackson, Dr. H. Bryant, Dr. J. F. Frisbie, Dr. A. S. Packard, Jr., Dr. George Rolleston, Mr. W. C. Russell, and Mr. George G. Varney, the collection is likewise indebted for many interesting specimens.

The Curator of Microscopy reports that the Bailey and other collections under his care, are now in good preservation, but have not as yet been put in such order as their importance demands.

Quite a number of mounted specimens and rough material for the same have been presented through the Microscopic Section during the past year, by Dr. S. A. Bemis, Messrs. C. G. Bush, J. S. Melvin, and Dr. C. F. Winslow. The meetings of the Section have been well attended,

and additional interest in both it and the general Society thereby excited.

The additions to the Ethnological collection made during the past year, are:

Bow and arrows, evidently Californian, (from perhaps the region of Shasta Mountain). Presented by Dr. H. Bryant.

Stone axe, made by aboriginals of Eastern North America. Presented by A. E. L. Dillaway.

Grass mat, manufactured by, and the costume of, the women in West Africa.; also hasheesh or hemp cigars, in use there. Presented by Horace McMurtrie.

The following additions have been made to the department of Comparative Anatomy during the past year.

Skeletons 3; Parts of skeletons 10; Skulls 20; Skins of mammals 4; Mammals in spirit 5; miscellaneous 3: total 44.

Among the most valuable of these are two complete skeletons, and several skulls of natives of the Sandwich Islands, brought from Honolulu by Mr. H. Mann. One of these skeletons has been mounted and placed in the Anthropological case. Dr. C. T. Jackson has also presented a valuable human cranium from California. Additions have also been received from Drs. A. A. Gould, A. S. Packard, Jr., H. Bryant, B. J. Jeffries, C. A. Kirkpatrick, J. K. Warren, S. Kneeland, and the Boston Milling and Manufacturing Company.

The specimens belonging to the department, with the exception of the skins, are in good order.

The Curator of Ornithology states that the original collection is in the same good order as reported last year.

Late in the last autumn, the Lafresnaye collection of birds presented by the Curator, arrived from France. This fine collection, numbering 8,656 specimens, arrived in very perfect condition, as the Curator while in France, personally superintended the packing of the specimens. The collection formed by Count Lafresnaye, one of the most eminent ornithologists in France, is of great value as containing the type

specimens of over seven hundred species, most of them American, and largely representing the bird fauna of tropical America, and therefore of special interest to local ornithologists in this country, as affording them great facilities for the examination of the rarer types, besides being of great importance as a general collection.

Many of the species were identified by M. Jules Verreaux, who also catalogued the entire collection, and who is doubtless the most conversant of living ornithologists with the species of birds in general.

The Curator would mention particularly the services of Dr. J. C. White in rearranging the collection, who specially deserves the thanks of the Society.

The department of Oölogy remains in the same condition as last year. There have been no additions.

The collection comprises the eggs of two hundred and thirty-five species of birds, exclusive of eggs not identified. They have been rearranged by Mr. B. P. Mann, according to Baird's Catalogue for the North American species.

The Curator of Herpetology reports that since the department came under his charge, the Reptiles have been put into a safe condition, until proper jars and alcohol shall be furnished for the exhibition of the remainder of the collection.

The additions to the department during the year number sixty-nine, and have been received from the following gentlemen: Drs. A. S. Packard, Jr., S. Kneeland, and C. F. Winslow, Messrs. S. Hinckley and Florence Andernach, D. White and Capt. Barber.

During nearly the whole year, one day per week has been devoted by the Curator of Ichthyology to the collection under his charge. The alcoholic specimens, with a very few exceptions, are now catalogued; each species and locality being entered under a distinct number. A large portion of the species have been identified.

With the exception of labelling the few hundred specimens on exhibition, little work can be done on the collection until the much needed jars and alcohol are provided.

The large collection of fishes from the Sandwich Islands, presented by Dr. C. F. Winslow, nearly six years since; the valuable collection of Cuban fishes, procured from Prof. Poey, with his identifications, three years ago; the collection of North American fishes, presented by the Smithsonian Institution during the past year; and those made by the Curator during the last two years, at Lake Erie and several of the lakes in Maine, still remain in cans and kegs for the want of jars.

For some time past it has been the wish of the Curator to place on exhibition a complete series of the fishes of New England, for which purpose he has paid special attention to the collection of specimens in various parts of New England, and if jars and alcohol were now at his command, a very fair exhibition of the New England Ichthyological fauna could be made, which, in a few years, could be perfected, though it would be necessary to represent the larger fishes, especially the sharks and skates, by stuffed specimens.

Is there not some member of the Society who would be willing to provide the means of placing such a special and valuable collection, which could be called after his name, in our cases?

The principal receipts during the year have been: 1st, the collection of fifty-four species of North American fishes, identified by Prof. Gill, and presented by the Smithsonian Institution; 2d, the collection of ten species and about one hundred specimens of Labrador fishes, presented by Dr. A. S. Packard, Jr.; 3d, a collection of about forty species and one thousand specimens, made by the Curator in October last, at Kelley's Island, Lake Erie.

Besides the above mentioned collections, about twenty specimens have been received from Dr. B. S. Shaw, Messrs. C. J. Sprague, W. H. Dall, J. S. Lewis, Samuel Hubbard and R. C. Greenleaf. Mr. Caleb Cooke of Salem, has presented a fine specimen of the rare *Leptocephalus gracilis* Storer, one of six which he collected on Nahant beach in July, 1858.

The Acting Custodian reports, in the absence of the Curator of Entomology for a portion of the year, that good

progress has been made in naming and arranging the insects. Many of the moths, comprising the families Zygænidæ, Bombycidæ, and Phalænidæ, have been most neatly labelled and arranged in boxes by Mr. F. G. Sanborn, who has devoted much time during the past winter to this work. Several families of the Hymenoptera have been labelled by Dr. Packard, and many of the Ichneumonidæ by Mr. E. T. Cresson, Curator of the Entomological Society of Philadelphia, to whom the duplicates of the collection have been entrusted for that purpose. The MSS. names bestowed on numerous species by Dr. Harris, have been thus in many cases retained and credited to him. Mr. E. Norton has returned labelled, several additional species of Tenthredidæ, and also a small collection of Ichneumonidæ loaned from the collection.

The alcoholic collection has been put in safety, and the boxes containing dry specimens placed out of danger from the ravages of insects by being deposited in a large tight case, exposed to the strongest fumes of benzine.

There have been added over six hundred specimens, of which the principal donors are Drs. H. Bryant, S. A. Bemis, C. F. Hildreth, A. A. Gould, C. T. Jackson, S. Kneeland, Jr., C. F. Winslow, Messrs. A. R. Grote, Samuel Hubbard, S. H. Scudder and Prof. J. L. Smith.

The collection of Crustacea has been increased by four hundred and forty specimens. Of these fifty species, comprising about three hundred and forty specimens, represent the crustacean fauna of Labrador; and twenty-five species, eighty specimens, that of Maine. The donors are Drs. B. S. Shaw, A. A. Gould, A. S. Packard, Jr., and Messrs. E. R. Mayo, Samuel Hubbard, C. Stodder, and Capt. E. Smith.

The Department of Worms having been united with that of Crustacea, they have been rearranged, placed in new bottles, and are about to be catalogued. The entire collection consists of fifty-five species, comprising thirty species, one hundred and fifteen specimens, from the coast of Labrador; and fourteen species, sixty-five specimens, from Maine, obtained by the Curator. The donors this year are Messrs. F. G. Sanborn, C. C. Sheafe and Dr. A. S. Packard, Jr.

The Department of Conchology remains in much the same state as at the last annual report. The Gasteropods alone are on exhibition, arranged in the rail cases of the first gallery. These form rather less than one third of the whole number of specimens in the possession of the Society, and it is to be regretted that no steps have yet been taken to furnish a room for the display of the remainder of the collection. The Curator again desires to call attention to the paucity of alcoholic specimens. It is very desirable that members of the Society should fill this blank. The commonest species of Mollusca preserved in spirit would be acceptable, even from the immediate neighborhood of Boston. The additions received during the past year, although not numerous, are very valuable; among them may be especially mentioned fifty-four species, described by C. B. Adams, from Panama; eighty-nine species, P. P. Carpenter's types, from Vancouver's Island and California; series of P. P. Carpenter's types of Mazatlan shells; series of land, fresh-water and marine shells, named from Dr. Gould's types, and the Cuming Collection, obtained by the U. S. Exploring Expedition under Commodore Wilkes; upwards of one hundred and fifteen species of Mollusca, mostly alcoholic, from the coast of Labrador, from Dr. A. S. Packard, Jr; a series of Cuban shells, named and presented by Dr. Gundlach; series of British Mollusca, from Dr. H. Bryant, twenty-two species of Achatinella from the Sandwich Islands, presented by Dr. A. Chapin. Beside these we have also received donations from Drs. C. T. Jackson and A. Coolidge, amounting in all to about fifteen hundred specimens.

The arrangement of the collection of Radiata during the past year has been greatly advanced, but the work has been done more with reference to securing their permanent value, than to exhibit them. When the collection was placed under the charge of the present Curator, a very large part of the specimens of corals had no labels connected with them, to indicate their localities, or donors, and the few labels that had been formerly placed upon them loosely, were mostly lost, or misplaced, during the packing up and two successive removals of the collection. The same was true, to a consider-

able extent, of the collection of Echinoderms, both dry and alcoholic. The first object, therefore, was to trace the origin of as many of the specimens as possible, and not only identify the species, but to endeavor to ascertain their localities, and render such accidents in the future impossible, by attaching securely to each specimen a number corresponding to that of the label, and to a systematic catalogue. Many localities have been found by searching the records and Proceedings of the Society, and others by direct comparison with authentic specimens from other collections. Particular attention has been paid to identifying the types of new species described from the Society's specimens by Mr. Desor, Mr. Girard, and others. Many of these original specimens have been found without labels, but others, and especially the types of the Echini, described by Girard, have not been found. Possibly these have been lent to some other institution by some former Curator and not yet returned. The alcoholic collection of Echinoderms, which is a valuable one, has not been arranged for want of alcohol and bottles, but the specimens have all been put into a condition of safety, and a part of them have been catalogued. The collection of dried Echinoderms have all been catalogued and arranged upon the shelves, and nearly all of them authentically identified. This collection is quite large and valuable, but is still quite deficient in star-fishes and Ophiurans. The corals have been mostly identified, and partially catalogued, and all of them placed on the shelves of the gallery. Their systematic arrangement has been deferred until the cases destined for them are made ready by the new arrangement of the birds. The final labels have not yet been written, this having been deferred as of less importance, until the cataloguing is completed. The following additions have been received; from the Essex Institute, ten specimens, ten species, East India corals; from Dr. A. S. Packard, Jr., two hundred and fifty specimens, forty species, mostly from Labrador; from N. Appleton, six specimens, three species, corals; from the Museum of Yale College, ten specimens, five species, Echinoderms of United States; and forty-nine specimens, twenty-nine species, corals and Echinoderms, mostly from Panama, all of which are new to the

collection. There have been sent away in exchange, to Yale College, forty-five specimens, thirty-two species.

The Curator of Botany reports that the Herbarium and other Botanical collections came into his hands and under his care last August, upon his return home, and were then, owing to the excellent care of his predecessor, in very good condition, but were still necessarily loose in folds of thin paper, in which condition they were in danger of being soon ground to powder if much handled, and of having the labels, often as important a part of the specimen as the dried plant itself, lost or misplaced. The larger part of the collection was arranged according to the classification of Endlicher's "Genera Plantarum," which had the very great advantage of rendering any plant easy of access by the current number of the Genus upon the cover. Since the publication of Endlicher's "Genera Plantarum," however, the acquisitions to botanical science have been so large as to render a somewhat revised arrangement necessary, and as that is to be found nowhere better than in the new "Genera Plantarum" of Bentham and Hooker, that work has been adopted as the standard by which to arrange the collection, and it has been rearranged in accordance with it as far as the work now goes.

As it is unsafe to allow Herbarium specimens to be much handled until they are securely glued to stiff paper, and as the view has been to render the Herbarium accessible and useful as far possible, a good deal of attention has been paid to having them so glued, and about fifteen thousand specimens have undergone such treatment during the winter. Other necessary work towards the lasting arrangement and preservation of the collection has been done, so far as time permitted.

It is hoped that the work, such as is mentioned above, is about half done. The necessary expenditures for assistance, paper, etc., have been less than three hundred dollars ($300) so far, and another two hundred dollars will perhaps suffice to finish the work. The amount is larger than was at first estimated, but the difficulty of forming a judgment beforehand is considerable.

In regard to the accessions during the past year, a list of which is given below, the only one of much importance is the Musci Exsiccati Boreali-Americani of W. S. Sullivant and Leo Lesquereux, containing three hundred and fifty-five species, and the Lichenes Americanæ Septentrionales, curante E. Tuckerman, fasciculæ 1–6, containing over one hundred species, besides numerous other species from different localities of both Mosses and Lichens, presented by our former Curator C. J. Sprague, Esq., to whom the Herbarium already owed so much in the very valuable series of Fungi which it now possesses. These accessions have made the Cryptogamic collection equal in value with the rest of the Herbarium, and give a fair illustration of those plants which are found in the United States.

Specimens have also been presented by Drs. J. S. Bemis, C. Pickering, C. F. Winslow, A. S. Packard, Jr., S. Kneeland, Jr., and Messrs. Gunning, E. R. Mayo, H. M. McIntire, William Nelson, and S. Wells, Jr.

The Curator of Mineralogy reports that he has been engaged during all the time that he could devote to this department, in cleaning and in placing upon the shelves, such specimens as were considered worth adding to the collection. The whole number of specimens belonging to the Society, now on exhibition, is about two thousand, and there are besides a large number that will be serviceable for exchange.

Of the whole number, a considerable portion have become the property of the Society through the liberality of Dr. Charles T. Jackson, and such portion would have been much greater than it is, if it had not been for the destruction of a large number of specimens in the damp cellar of our former building in Mason Street, where they were unfortunately stored for many years.

Dr. Jackson has continued to manifest his interest by presenting from time to time during the year past, valuable minerals brought by him from various localities, and the collection is also indebted to the Agassiz Natural History Society, to Dr. W. H. Dale, Dr. Henry Bryant, Dr. A. S. Packard, Jr., G. P. Huntington, Prof. Jeffries Wyman and others for interesting specimens.

REPORT OF THE TREASURER

ON THE

FINANCIAL AFFAIRS OF THE SOCIETY.

For the year ending May 1, 1866.

The Receipts and Expenditures for the year have been as follows:

Receipts.		
Dividend on Stocks		$5,982.00
Admission Fees		150.00
Annual Assessments		1,140.00
Courtis Fund Income		180.00
Walker Fund "		1,233.15
Bulfinch St. Estate Income		1,029.26
Life Membership		100.00
H. F. Wolcott Fund Income		140.50
Loan of Globe Bank		5,000.00
Total		$14.904.91
Expenditures.		
New Building and Grounds	$456.85	
Alterations for Department of Ornithology	5,030.61	
Furniture for New Building	60.84	
Cabinet	1,169.26	
Library	823.10	
Journal and Proceedings	1,030.38	
Repairs of New Building	612.81	
Salaries, wages, etc.	2,023.30	
Insurance (principally for five years)	752.50	
Fuel	371.55	
Gas	126.24	
Water Rates	35.00	
Sundry Expenses	670.21	
Interest	102.50	$12,795.10
Excess of Receipts over Expenditures		$2,109.81

The following is a Statement of the property of the Society, exclusive of the Cabinet and Library:

New Building.		
Building and Grounds, at cost	$99,881.26	
Furniture	10,155.89	$110,037.15
Bulfinch St. Estate.		
House in Bulfinch Street		25,000.00
Courtis Fund.		
Note Receivable secured by mortgage		3,000.00
Walker Fund.		
Notes Receivable secured by mortgage	$41,105.00	
Cash in the hands of Trustees	1,380.10	42,485.10
H. F. Wolcott Fund.		
$5000 U. S. Treasury 7.30 Notes		5,000.00
W. J. Walker Bequest.		
17 Shares Bates Manufacturing Co.	$2,720.00	
35 " Everett Mills	5,250.00	
30 " Hamilton Woollen Co.	9,000.00	
1 " Lawrence M. Co.	820.00	
80 " Washington Mills	12,480.00	
12 " Cocheco M. Co.	8,400.00	
2 " Lowell M. Co.	1,710.00	
4 " Laconia M. Co.	4,800.00	
3 " Pepperell M. Co.	3,225.00	
25 " Essex Co.	2,325.00	
300 " Old Colony and Newport R. Co.	31,500.00	
110 " Vermont and Canada R. Co.	10,560.00	
3 " Cape Cod R. Co.	195.00	
11 " Neptune Ins. Co.	2,200.00	
18 " Boston Ins. Co.	2,340.00	97,525.00
Miscellaneous.		
Cash in hands of Treasurer	$1,703.26	
Unsettled Accounts	37.92	1,741.18
Total		$284,788.43
Deduct Indebtedness.		5,004.00
Net value of Property		$279,784.43
Value of Property as estimated May 1, 1865		176,881.51
Increase		$102,902.92

The Stocks derived from the munificent bequest of Dr. W. J. Walker, did not come into the possession of the Society until December 5, 1865; and the income therefrom has all accrued during the five months that have since elapsed. We should not be warranted, how-

ever, in anticipating a continuance of such liberal dividends, especially on the manufacturing stocks.

In consequence of a legal difficulty, which has arisen in the course of the settlement of the Walker estate, a large portion of the property remains in the hands of the executors for distribution at a future, perhaps, a distant period of time. When this difficulty is disposed of, this Society, as well as the other institutions which are entitled to the residue of the estate, will receive a large addition to their resources. Under these circumstances, no reliable estimate can be made of the income of the Society for the ensuing year.

In regard to the necessary expenses of the Society for the next year, those of the present, may, perhaps, serve as a guide, though a very uncertain one; as its expenditures hereafter will probably keep even pace with its greatly increased means of usefulness.

Dr. THOS. T. BOUVÉ, CHARLES J. SPRAGUE, AND EDWARD PICKERING, TREAS., TRUSTEES, Cr.

IN ACCOUNT WITH THE INCOME FROM THE WALKER FUND.

1865.			1866.		
April 30.	To Cash balance on hand at date . . .	$146.95	April 7.	By Cash paid and transferred to Edward Pickering, Treasurer of the Society, one half of the full income from this Trust during the year	$1,283.15
Sept. 1.	" received on Note of P. Hubbell & J. A. Turner for $25,000, six months interest to date . .	750.00	April 30.	" balance to new account to date .	1,330.10
Oct. 6.	" received six months' interest on Note of W. & E. B. Mountford for $16,105 to October 7th .	483.15			$2,613.25
1866.					
March 6.	" received six months' interest on Note of P. Hubbell & J. A. Turner to 1st inst.	750.00			
April 9.	" received six months' interest on Note of W. & E. B. Mountford for $16,105 to April 7th . .	483.15			
		$2,613 25			

Errors Excepted.

Boston, April 30, 1866.

DR. THOS. T. BOUVÉ, CHARLES J. SPRAGUE, AND EDWARD PICKERING, TREAS., TRUSTEES, CR.

IN ACCOUNT WITH THE BULFINCH STREET ESTATE.

1865. April 30.	To Cash balance on hand date brought from old account	$781.61	1865. May 9.	By Cash paid D. Tillson & Son for repairing roof	$8.01
Dec. 30.	" received of Mrs. Clarke, for six months' rent of house from Oct. last . . . . . $500 less interest allowed . . 15	485.00	June 10.	" paid T. T. Litchfield for work on drains and cesspool . . .	21.34
			Dec. 30.	" paid tax on house . . . $316 less received of Mrs. Clarke 158	158.00
			1866. April 6.	" paid to Edward Pickering, Treasurer of the Society, balance of the amount on hand date towards settlement of bills for work on cases, etc.	1,029.26
		$1,216.61			$1,216.61

Errors Excepted.

Boston, April 30, 1866.

Dr. Thos. T. Bouvé, Charles J. Sprague, and Edward Pickering, Treas., Trustees, Cr.
In Account with the Income of the Courtis Fund.

1866. April 12.	To Cash received of Warren Street Chapel, interest one year on mortgage note of $3,000 to Nov. 1st, 1865	$180.00	1866. April 12.	By Cash paid to Edward Pickering, Treasurer, amount received from Warren Street Chapel . . .	$180.00

Errors Excepted.

Boston, April 30, 1866.

CONDITION AND DOINGS

OF THE

BOSTON SOCIETY OF NATURAL HISTORY

AS EXHIBITED BY THE

ANNUAL REPORTS

OF THE

CUSTODIAN, TREASURER, LIBRARIAN AND CURATORS.

MAY, 1867.

BOSTON:
PRINTED FOR THE SOCIETY.
1867.

LIST OF OFFICERS IN APRIL, 1867.

PRESIDENT,
JEFFRIES WYMAN, M.D.

VICE-PRESIDENTS,
CHARLES T. JACKSON, M.D., THOMAS T. BOUVÉ.

CORRESPONDING SECRETARY,
SAMUEL L. ABBOT, M.D.

RECORDING SECRETARY,
SAMUEL H. SCUDDER.

TREASURER,
EDWARD PICKERING.

LIBRARIAN,
SAMUEL H. SCUDDER.

CUSTODIAN,
SAMUEL H. SCUDDER.

CURATORS,

THOMAS T. BOUVÉ,	PALÆONTOLOGY.
THOMAS T. BOUVÉ,	MINERALOGY.
THOMAS M. BREWER, M.D.,	ORNITHOLOGY; (NESTS AND EGGS).
HENRY BRYANT, M.D.,*	ORNITHOLOGY.
JAMES C. WHITE, M.D.,	MAMMALOGY AND COMP. ANATOMY.
SAMUEL H. SCUDDER,	ENTOMOLOGY.
FRED. W. PUTNAM,	ICHTHYOLOGY
B. JOY JEFFRIES, M.D.,	MICROSCOPY.
CHARLES PICKERING, M.D.,	ETHNOLOGY.
ALPHEUS HYATT,	CONCHOLOGY.
A. S. PACKARD, JR., M.D.,	CRUSTACEA.
ADDISON E. VERRILL,	RADIATA.
HORACE MANN,	BOTANY.
BURT G. WILDER, M. D.,	HERPETOLOGY
WILLIAM T. BRIGHAM,	GEOLOGY.

* Deceased.

REPORT OF THE CUSTODIAN

OF THE

BOSTON SOCIETY OF NATURAL HISTORY,

EMBODYING THE REPORTS OF THE LIBRARIAN AND CURATORS
OF THE SEVERAL DEPARTMENTS

FOR 1866–7.

The most important events in the history of the past year have been the death of two of the officers of the Society; the bequests of Miss Pratt and Mr. Pope; the opening of the Lafresnaye collection to the public; the formation of a new Section holding special meetings; the division of one of the departments into two; the measures taken by the Council to furnish all the unfinished rooms in the building; and the establishment of a sinking fund to provide for prospective enlargements of our boundaries.

In the decease of Drs. A. A. Gould and Henry Bryant — so long officially connected with the Society, so prominent in wise counsel, so munificent in gifts — we have met with an irreparable loss. As notices of their lives and services have been prepared by Committees appointed for that purpose, I need only add that, both before and after the death of Dr. Gould, every reasonable measure was taken to secure his Molluscan collection for our Museum, and that had he lived a few months longer, it would doubtless have come into our possession; but the funds of a private Institution could not compete with the treasury of a State-Museum, even had it been desirable to expend so great an amount upon a collection which would largely duplicate our own.

The bequest of Miss Pratt, which included a rare collection of shells, some choice conchological works, and a fund to provide for their care and increase, will be noticed at length in this report.

Nothing could have been more timely than the bequest of Mr. Pope. The necessity of fitting up the lecture room, new exhibition rooms, and another apartment for books, had become so apparent, that we feared our means of usefulness would be crippled, as in former years, by the almost total absorption of our annual income for purposes of construction. The Council have now less hesitation in expending a portion of the principal of the Walker bequest, given, among other purposes, for building, since the donation of Mr. Pope will enable them to supply the lack of annual income. The donation amounted to $20,000.

The lower half of the geological room has been fitted up, workmen are employed on the conchological room, and contracts are either made, or under consideration, for furnishing the lecture room, the lower half of the rear library, and a room to be devoted to Ichthyology and Herpetology. A plan for courses of lectures is before a special Committee, and as our building will probably require additions in ten years, a sinking fund has been established for that purpose, with the money received from the Bulfinch Street Estate.

Twenty general meetings of the Society, one special meeting, and eight meetings of the Section of Microscopy, have been held during the year. A new section for the encouragement of the study of Insects was formed last November through the agency of the Harris Entomological Club; this Club had already been in existence for two years, and was composed exclusively of members of the Society; six monthly meetings of the new Section have been held, and the results have more than met the anticipations of those specially interested in its establishment.

There has been an average attendance of thirty-seven members at the general meetings of the Society; of twelve at the meetings of the Section of Microscopy, and of four-

teen at those of the Section of Entomology — a slight advance on the attendance of previous years.

At these meetings, forty-four communications have been presented by thirty-one individuals, viz., thirty-two communications by twenty-six individuals at the general meetings; three communications by two individuals at the meetings of the Section of Microscopy; and eight communications by five individuals at those of the Section of Entomology. Their titles are as follows: —

DR. S. L. ABBOT. Translation of an account of the chase and capture of a male Gorilla, by M. Henri de Parville. *March* 6, 1867.

A. AGASSIZ. Description of *Salpa Cabotti* Desor. *June* 20, 1866.

CAPT. N. E. ATWOOD. On the habits of our native *Gadidæ*. *December* 5, 1866.

PROF. L. W. BAILEY. Note on some peculiar modifications in form of the flowers of *Epigæa repens*. *January* 16, 1867.

EDWIN BICKNELL. On a sculptured stone from Lake Utopia, New Brunswick. *November* 21, 1866.

W. P. BLAKE. Note on the occurrence of Gold with Cinnabar in the Secondary or Tertiary Rocks. *October* 3, 1866.

DR. T. M. BREWER. On the habits of the Yellow Red-poll Warbler. *March* 6, 1867.

W. T. BRIGHAM. The Volcanoes of the Hawaiian Islands. *June* 20, 1866.

Table of Measurements of three hundred Chinese. *December* 5, 1866.

Note on the Pinjrapol or Animal Hospital at Bombay. *April* 4, 1867.

DR. HENRY BRYANT. Additions to a List of Birds seen at the Bahamas. *October* 17, 1866.

A List of the Birds of St. Domingo, with descriptions of some new species or varieties. *December* 5, 1866.

PROF. H. J. CLARK. On the *Spongiæ Ciliatæ* as *Infusoria Flagellata*, or the structure, animality and classificatory relationship of *Leucosolenia*. *June* 20, 1866.

PROF. A. L. FLEURY. Rocks in Nature and in the Arts. *March* 20, 1867.

R. C. GREENLEAF. On the Diatoms and other microscopic objects found in Soundings from the Gulf of Mexico, between Sand Key and El Moro. *November* 14, 1866.

PROF. N. M. HENTZ. Supplement to the Descriptions and Figures of the *Araneides* of the United States (posthumous paper). *December* 23, 1866.

DR. C. T. JACKSON. On Meteoric Iron from Colorado. *November* 7, 1866.

DR. B. JOY JEFFRIES. On the Anatomy and Physiology of the Ciliary Muscle in Man. *May* 16, 1866.

Table of measurements of forty members of the Independent Corps of Cadets. *November* 7, 1866.

DR. SAMUEL KNEELAND. On a fungoid Parasite or Caterpillar fungus from the Philippine Islands; with remarks by C. J. Sprague on the probable botanical relations of the fungus, and by C. Stodder on a Microscopical Examination of the same. *February* 6, 1867.

THEODORE LYMAN. On the habits of our river fish and the construction of Fish-ways. *February* 6, 1867.

HORACE MANN. Description of the Crater of Haleakala in the Hawaiian Islands. *January* 2, 1867.

W. H. NILES. On the Echinoderm Fauna of the Burlington Limestone of Iowa. *May* 16, 1866.

DR. A. S. PACKARD, JR. View of the Lepidopterous Fauna of Labrador. *October* 17, 1866.

Materials for a Monograph of the *Phalænidæ* of North America. *December* 26, 1866.

DR. C. PICKERING. On the evils threatened by the recent introduction of the House-Sparrow of Europe into this country. *April* 18, 1867.

TRYON REAKIRT. On a variation of *Argynnis Idalia*. *March* 27, 1867.

GEORGE SCEVA. On the cramped feet of Chinese Women. *December* 5, 1866.

S. H. SCUDDER. Results of an Examination of a small collection of fossil Insects obtained by Prof. Wm. Denton, in the Tertiary Beds of Green River, Colorado. *January* 23, 1867.

On the localities of fossil Insects in America and Europe, with remarks on the fossil larva from the Connecticut River Sandstone. *March* 6, 1867.

On the Devonian Insects of New Brunswick, and on a neuropterous wing from the Carboniferous Strata of Cape Breton, Nova Scotia. *March* 27, 1867.

N. S. SHALER. On the formation of mountain chains. *May* 2, and *June* 6, 1866.

Notes on the position and character of some glacial beds containing fossils, at Gloucester, Mass. *October* 3, 1866.

CHARLES STODDER. On Infusorial Earth from Peru. *October* 10, 1866.

On a recent gathering of Diatomaceous Mud at Pleasant Beach, Cohasset. *February* 13, 1867.

JAMES G. SWAN. On the Meteorology of Cape Flattery, Washington Territory. *April* 4, 1867.

L. TROUVELOT. On the reproduction of lost parts in *Phasmidæ*. *November* 28, 1866.

On Monstrosities observed in the wings of Lepidopterous Insects, and how to produce the same artificially. *January* 23, 1867.

On a method of stimulating union between Insects of different species. *February* 27, 1867.

COL. CHARLES WHITTLESEY. On the Weapons and Military Character of the Race of the Mounds. *March* 20, 1867.

DR. BURT G. WILDER. On a cat with supernumerary digits. *May* 16, 1866.

DR. J. WYMAN. Dissection of a young domestic pigeon. *June* 20, 1866.

On the Morphology of the Leaves of *Sarracenia*. *November* 21, 1866.

Notes on the fresh-water shell-mounds of the Aborigines of Florida. *April* 18, 1867.

We have elected during the past year four Honorary Members, seven Corresponding Members, and forty-one Resident Members. Of the latter ten have not yet ratified their

election by complying with the regulations of the Society; seven have neither paid the entrance fee nor signed the Constitution; two have signed the Constitution, but have not paid the fee, and one has paid the fee although he has neglected to sign the Constitution.

We have received eleven new subscribers to our Memoirs and nineteen to our Proceedings; others, however, have withdrawn their names, leaving one hundred and seventy-four subscribers to our Memoirs, and two hundred and thirteen to our Proceedings, a number not yet sufficient to cover three-fourths of the cost of printing.

We have issued during the year the first number of our Memoirs in quarto; and the second number is nearly through the press; this is a continuation of the Journal, formerly printed in octavo. We have completed the tenth volume of the Proceedings, and printed the first quarter of the eleventh volume, and the Annual Report for 1866. The Publishing Committee have been authorized to print an octavo volume of extracts from the Entomological Correspondence of the late Dr. T. W. Harris, together with any memoranda left by him, which may be of value to the student or agriculturist. The volume will be illustrated and published independently, possibly as the commencement of a series of similar works.

An Annual of the Society, and a Guide Book to the Museum, will probably be undertaken during the present year.

As the edition of several signatures of the eighth volume of our Proceedings was almost exhausted, the Council recently authorized the reprinting of a small edition of the missing parts. In a few weeks the whole volume can be obtained; the first volume will then be the only one out of print.

Our exchanges with other scientific institutions have been more extensive, both in receipts and in transmissions, than ever before. We have sent away 243 copies of Part I., of our Memoirs, 901 copies of various numbers of our Journal, — 123 of which were imperfect in plates — 539 volumes of our Proceedings, 268 Annual Reports for 1865, and 245 for

1866, an amount equivalent to over 400,000 octavo pages. We are deeply indebted to the Smithsonian Institution for their liberality in transmitting, free of charge, all shipments to and from Europe; by the last Annual Report of the Institution, it appears that the transmissions to and by our Society exceed those of any similiar organization in the country.

In this connection I may refer to my year's absence in Europe, where I sought by every opportunity to advance the interests of the Society. I took with me a detailed list of our incomplete sets of publications of foreign Societies, and in every city through which I passed, made personal application to the officers of these Institutions, for what we needed. Several cities were visited almost solely for this purpose. Whenever other Societies were found with which we made no exchanges, and where such relationship seemed desirable, I made overtures on the Society's behalf, and almost invariably with success. As this method could but partially effect what I desired, I prepared circular letters, setting forth the character of the Society, and its desire to extend its list of exchanges with similar organizations, and sent them to one hundred and eighty institutions in Continental Europe. And here our thanks are specially due to Dr. Felix Flügel of Leipzig, and M. Hector Bossange of Paris; they translated these letters into German and French, aided me in procuring the needed addresses, forwarded them to the quarters designated, and permitted the use of their names as agents of the Smithsonian Institution, through whom replies might be forwarded. Their uniform courtesy in assisting me in every way during my stay in Dresden and Paris, deserves my warmest acknowledgments. In reply to these applications forty-three responses have already been received. Three of the Societies declined the offer simply because they made no exchanges. As the letter requested the exchange of back issues of our respective transactions as well as of future publications, we have been favored with many complete series: this explains the large accession to our Library, and the unusual distribution of our own publications. At the same time, so many promises of extensive series, made to me

either in person or by letter, still remain unfulfilled, we may confidently anticipate an equal accession for the coming year.

Our publications are now sent to two hundred and fifty-three different Institutions. The following is a List of forty Institutions with which permanent relations of exchange have been recently effected.

Akklimatisations-Verein	Berlin.
Gesellschaft Naturforschender Freunde	"
Verein von Alterthumsfreunden im Rheinlande	Bonn.
Massachusetts Institute of Technology	Boston.
Vorarlberger Museums-Verein	Bregenz.
Naturwissenschaftlicher Verein	Bremen.
Schlesische Gesellschaft für vaterländische Cultur	Breslau.
Société Botanique de Belgique	Bruxelles.
Société Royale Linnéenne	"
Naturhistorischer Verein	Dessau.
Gelehrte Estnische Gesellschaft	Dorpat.
Gesellschaft für Natur- und Heilkunde	Dresden.
Kön. Akademie gemeinnütziger Wissenschaften	Erfurt.
Società Ligure di Storia Patria	Genova.
Geological Society	Glasgow.
Oberlausitzische Gesellschaft der Wissenschaften	Görlitz.
Kongliga Vetenskaps och Vitterhets Samhälle	Götheborg.
Verein der Aerzte in Steiermark	Graz.
Société des Sciences Naturelles	Groningue.
Institution Teylérienne	Haarlem.
Naturforschende Gesellschaft	Halle.
Wetterauer Gesellschaft für die gesammte Naturkunde	Hanau.
Finska Läkare-Sällskapet	Helsingfors
Medicinisch-naturwissenschaftliche Gesellschaft	Jena.
Naturhistoriske Forening	Kjöbenhavn.
" Tidsskrift	"
Obshtshestvo Morskaia Wratchei	Kronstadt.
Universitas Carolina Lundensis	Lund.
Société d'Agriculture, Industrie, Sciences et Arts du Département de la Lozère	Mende.
Société Impériale d'Agriculture	Moscou.
Connecticut Academy of Arts and Sciences	New Haven.
Odesskoe Obshtshestvo Istorii i Drevnostei	Odessa.
Société d'Anthropologie	Paris.
Société Impériale et Centrale d'Horticulture	"
Conchological Section of the Academy of Natural Sciences	Philadelphia.
Entomological Society	"
Meklenburgischer patriotischer Verein	Rostock.
Allgemeine Schweizerische Gesellschaft für die gesammten Naturwissenschaften	Switzerland.

Société Academique du Département de l'Aube . . Troyes.
Kön. Kais. geographische Gesellschaft . . . . Wien.

The following table gives a summary of the additions to the Library by volumes, parts of volumes, pamphlets, maps, or charts:

	8vo.			4to.			folio.			Maps and Ch'ts	To'l
	vls	pts	ph	vls	pts	ph	vls	pts	ph		
Books presented by individuals . .	36	6	114	8		17		2	4	32	219
" received by the Pratt Bequest	22	2		3							27
" purchased	92	11	7	36		8	5	5			164
" deposited by the Republican Institution	23										23
" received in exchange . . .	355	410	92	108	197	27		109			1298
Total .	528	429	213	155	197	52	5	116	4	32	1731

The accessions to the Library have never been so large, excepting in 1864. We then received the bequest of the extensive botanical library of Dr. Greene, and the number reached 1748.

The greater part of the purchased books I obtained myself in Europe, the Council having appropriated several hundred dollars to that purpose.

The most important private gift to the Library was the bequest of Miss Pratt;—by it we received a complete set of Kiener's Spécies Général et Iconographie des Coquilles Vivantes, and a few other conchological works.

Some progress has been made in the perfection of the internal arrangements of the Library. The preparation of an alcove catalogue has been commenced, and the card catalogue has been arranged in trays, after the plan recommended by the Librarian in a previous report.

The Transactions of Societies have increased so rapidly that they require much more space than formerly; for this reason, the Periodicals and all works on Articulates, Mollusks and Radiates, have been removed to temporary cases in the back library. That room is now fitting up with new cases, which will provide ample space for the books in our possession, and for the natural expansion of the Library for

several years to come. For the last two years the pamphlets have remained in the condition previously reported; much work must be accomplished before they can be made readily accessible. As the Council have recently increased the assistance in the Library one-half, a portion of the unfinished work may be completed during the coming year; an unusual amount of labor will, however, be entailed by the changes incurred in fitting up the rear Library. The number of books which require binding is exceedingly great.

Five hundred and sixty-one books have been borrowed from the Library by seventy-three persons.

The number of visitors to the Museum has increased in the past year, but the enumeration must necessarily fall short of the actual number who come. The building has been open to the public one hundred and one days; previous to the exhibition of the Lafresnaye collection of birds, in September last, the average attendance was two hundred and fifty-seven; subsequent to that, three hundred and fifty-two, an increase of one-third. The average of the whole year was three hundred and thirteen. The greatest number of visitors during any one day, eight hundred and forty-six.

The Conchological cabinets bequeathed by Miss Pratt formed by far the most valuable accession to the Museum during the year. In the other departments the donations were less numerous than usual. Special mention should be made of the volcanic minerals given by Mr. Brigham, the donation to the Anatomical Department by Mr. Brooks, and the suite of fossils purchased of Dr. Hayden.

The additions to the Museum amount to 20,148 specimens received in 189 lots from 82 different sources.

Owing to the establishment of an Ethnological Museum in our vicinity, on an independent basis, with a large endowment, it has been thought best to give up the department of Ethnology, and to store our collections until they could be satisfactorily exchanged.

The additions to that department have been very slight,

consisting chiefly of various implements belonging to differerent nations. The donors were the Rev. Edw. Johnson, Dr. G. H. Brown, and Messrs. W. T. Brigham, J. C. Brown, Jr., Wm. Munroe and F. G. Sanborn.

The accessions to the department of Comparative Anatomy and Mammalogy have been as follows: skeletons, 3; parts of skeletons, 19; skulls, 12; skins of mammals, 2; mammals in spirits, 1; total 47.

The articulated skeleton of a pony, and a very valuable model in papier maché, illustrating the complete anatomy of the horse, were presented to the Society by Mr. Francis Brooks. The skeleton of an Asiatic elephant was also purchased.

During the past two months, this collection has been removed from the cases, cleaned, and to some extent rearranged. It is now in excellent condition, and contains about twelve hundred specimens on exhibition.

The Council have recently made an appropriation to cover the expense of preparing and mounting the mammal skins which have never been exhibited in our present Museum; when ready for exhibition, the ethnological collections will be removed to make place for them.

The donors to this department were Drs. J. N. Borland, F. H. Brown, H. Bryant, J. W. Merriam, W. M. Ogden and H. C. Perkins, Miss Carrie Porée, Messrs. F. W. Andrews, Joseph Ballard, W. T. Brigham, Francis Brooks, G. R. Hemming, H. Mann, S. Mixter, F. G. Sanborn, S. H. Scudder, J. G. Swan and J. F. Wallboum. We are also indebted to the Academy of Natural Sciences of Philadelphia.

Since the last annual meeting the invaluable Lafresnaye Collection of Birds has been opened to the public. The Society is under great obligations to Dr. J. C. White for his voluntary labor in the arrangement of the collection, during the absence of the late Curator. The space conceded to the department was all that could then be spared in justice to the other collections; now that new rooms are to be opened,

a considerable expansion is highly desirable. During the few weeks that Dr. Bryant spent here, just before his death, he transferred some of the families to cases in the main hall emptied for their reception; this somewhat impaired the unity of arrangement, but the birds presented a more attractive aspect, they could be more readily examined and were rendered safer from the depredations of insects. Every reasonable precaution has now been taken to protect them from the exposure to light complained of in the Curator's former reports.

The donations to the collection have not been very important; eighty-three specimens have been presented, one specimen has been purchased. Our thanks are due to Drs. S. A. Bemis, H. Bryant and S. Cabot, Maj. Lewis Cabot, Capt. Taylor and Messrs. W. T. Brigham, N. P. Hamlen, H. L. Lawrence, H. Mann and F. G. Sanborn.

Messrs. Luther Hills, Thomas J. Lee and E. L. Sturtevant have made small donations to the department of Oölogy, and Mr. B. P. Mann has presented his whole collection of birds' nests and eggs. The Curator has taken measures to secure large additions during the coming year.

The excessive price of alcohol has prevented the Curator of Herpetology from doing much beyond actually preserving the collection under his care. A short time ago, all the specimens on exhibition were removed to one of the unfinished apartments, to make room for the expansion of the collection of birds; the Committee of Construction are now making contracts for furnishing a new room; the gallery will be devoted to this department, and the specimens placed on exhibition as soon as the cases are completed.

Dr. A. C. Garratt, and Messrs. F. W. Andrews, R. C. Greenleaf, F. G. Sanborn and C. A. Stearns, have made slight additions to the collection.

The cost of alcohol has also prevented the Curator of Ichthyology from paying such attention to his department as would have been desirable. He has endeavored to preserve

the specimens from destruction, but they are suffering for want of an arrangement which can not be effected until an appropriation is made for bottles, alcohol and other necessary expenditures. The removal of the tax on alcohol used in scientific museums, has greatly reduced this most expensive item, yet the Curator estimates his present needs at from ten to fifteen hundred dollars. He is especially desirous of exhibiting a perfect collection of the fishes of this State; this would involve a further expenditure of one thousand dollars.

Owing to alterations in the Museum, much time has been spent in changing the specimens from place to place; they are now finally stored, awaiting the completion of the room destined for their reception.

On account of our inability to take care of specimens preserved in alcohol, no effort has been made to increase the collection, and but few donations have been made; for these we are indebted to Dr. A. C. Garratt, Capt. N. E. Atwood, and Messrs. F. W. Andrews, W. T. Brigham, C. G. Bush, H. D. Child, W. B. Fletcher, G. D. Oxnard and James G. Swan.

In the department of Entomology, Messrs. F. G. Sanborn and G. D. Smith have continued their work of preparing the Coleoptera for exhibition, and Mr. Sanborn has spent much time upon the arrangement of some of the nocturnal Lepidoptera. Mr. P. R. Uhler has returned most of the Hemiptera upon which he has been working for some years past. The Curator himself has been unable to pay any special attention to the arrangement of the specimens, and but little to their preservation. By the application of rubber tubing and forcing screws, the cases in which the insects are displayed have been made nearly air-tight; the glass in the sashes has been protected by a railing, and green shades will soon be placed over the cases to shield the specimens from the light.

At the request of the Curator, the temporary services of a competent person have been secured, and the collection will soon be placed in a condition of greater safety; there will be a preliminary arrangement of the insects in cases where they can be examined to much better purpose than is possible in their present condition.

As this section has a greater number of working members than any other, it has recently petitioned for a separate apartment; the labor is now carried on, at much inconvenience, in the office-room of the Custodian. The insect-cabinets are also scattered through various unfinished rooms in different parts of the building: as all of these rooms are to be fitted up at once, no place will remain in which the cabinets can be deposited. It has been suggested that one of the high-studded working rooms might be divided into two; this would secure the collection from the danger of further removal, and provide all necessary light and room.

During the year, Messrs. Sanborn and Smith have presented us with forty-five Coleoptera, of thirty different species, especially selected to fill breaks in our series. The Society is much indebted to these gentlemen for their continued labors in this department, and for the neatness and satisfactory character of their work. We are also indebted to Mr. Samuel Hubbard of San Francisco, for a collection of nearly two hundred Coleoptera from Lower California, and to the following persons for miscellaneous donations: Drs. S. A. Bemis, H. Bryant, A. C. Garratt, S. Kneeland, A. S. Packard, Jr., Capt. W. T. M. Ball, and Messrs. F. W. Andrews, T. T. Bouvé, W. T. Brigham, Edw. Burgess, A. Chapman, H. Davis, R. C. Greenleaf, Benj. D. Hill, Jr., Luther Hills, John Maury, H. H. Rönne, F. G. Sanborn, S. H. Scudder, C. A. Stearns, C. K. Stevens and C. Stodder.

Our small collection of Crustacea and Annelids has not materially increased. A number of specimens from Maine and Labrador have been labelled and placed on exhibition, and the collection is in good order. The only additions are due to the kindness of Rev. Edw. Johnson and Messrs. F. W. Andrews, R. C. Greenleaf, F. G. Sanborn and C. A. Stearns.

The Conchological department, which the active interest of Gould, Binney and Couthouy had formerly placed in advance of all our other collections, has been once more enriched by the bequest of Miss Pratt. Her collection was one of the finest private general collections in the country,

and by far the largest ever given to the Society; it contains 14,284 choice specimens in the very best condition. The genera Marginella, Pyramidella, Murex, Haliotis, Conus, Oliva, Cypræa, Rostellaria, Ancillaria, Bulla and Argonauta are remarkable for the beauty and variety of the specimens; the Pulmonifera, particularly the exotic forms of Bulimus and Achatina, form one of the most important parts of the collection. As the bequest included a fund of ten thousand dollars to provide for the care and increase of the collection, the services of a conchologist have been secured, and the furnishing of the exhibition room is nearly completed.

Apart from Miss Pratt's collection, 1,484 specimens have been added to this department. The Curator would again call special attention to the necessity of procuring specimens preserved in alcohol for the study of the soft parts,—the only large collection of this kind was presented by Mr. S. H. Scudder; it contained two hundred and fifty specimens of land and fresh water shells, collected in Texas.

Nearly one thousand shells from the Hawaiian and Marquesas Islands have been presented by the Rev. Edw. Johnson. The other donors to this department are Dr. S. Kneeland and Messrs. David Baker, W. T. Brigham, H. D. Child, H. Davis, Seth Goldsmith, Luther Hills, W. L. Robinson and R. E. C. Stearns.

The labor of identifying, labelling and cataloguing the Radiates has been much advanced during the year. The want of alcohol and bottles prevents the arrangement of the small but valuable alcoholic collection, but it has been examined and most of the species identified; the final labels have been written for a portion of the dried corals and echinoderms. Eleven donations have been received, containing two hundred and seventy specimens of about seventy-two species. The greater part came from the Hawaiian Islands, and were the gift of Messrs. Brigham and Mann. Capt. R. C. Adams presented twenty-three specimens of twelve species of corals from the East Indies, and Rev. Edw. Johnson eight specimens of eight species from Micronesia. All these specimens have been labelled and arranged.

The Curator has also labelled for the Society a collection of East Indian corals, chosen from the duplicates of the Essex Institute, and another of Echinoderms and corals from the west coast of America, received in exchange from the Museum of Yale College; these collections have not yet been forwarded. Donations have also been presented by Messrs. F. W. Andrews and S. H. Scudder, and Capts. N. E. Atwood and Edmund Smith.

The Microscopical collection is in good condition and has received additions at nearly every meeting of the Section. These meetings have been growing in interest, and the attendance has considerably increased. The donations, consisting principally of mounted Diatomaceæ, with some rough material, were presented by Dr. C. F. Crehore and Messrs. C. G. Bush and Wm. Munroe.

Another case has been provided to accommodate the extensive herbarium in the Society's possession. The plants are in good order, and during the early portion of the year, much labor was expended in gluing the specimens upon stiff paper; this was a continuation of the work of the previous year. There have been but few accessions to the collection; most of the specimens were such that they required to be exhibited on shelves.

A small but interesting collection of Gnaphalium leontopodium from the Tyrol and the Erzgebirge of Saxony, illustrating the variations caused in the same individual by differences of warmth, exposure and height, was presented by Mr. S. H. Scudder. Some additions have been received by exchange; for the rest the Society is indebted to Drs. H. Bryant, E. P. Colby, B. E. Cotting, A. A. Gould, S. Kneeland, Ferd. Müller, and C. Pickering, Prof. Gunning, and Messrs. W. T. Brigham, Francis Brooks, C. L. Brown, H. W. Haynes, H. Mann, C. A. Olmsted, H. H. Rönne, and S. H. Scudder.

There has been little change in the Palæontological department; the donations have been very acceptable, but neither numerous nor rare. The Tertiary fossils collected by Dr.

Hayden in the "Mauvaises Terres" of Nebraska, formed the most valuable accession; they consisted principally of remains of turtles and skulls of mammals; for the identification of the species we are indebted to the kindness of Dr. Leidy. The department is under obligations to the Academy of Natural Sciences of Philadelphia, as well as to the following persons for donations: Drs. C. T. Jackson, F. V. Hayden, H. C. Perkins, and J. Wyman, and Messrs. C. G. Bush, H. Davis, B. F. Mudge, S. H. Scudder, James G. Swan and Joseph Wagner.

The department of Geology has been recently separated, as in former times, from the department of Palæontology; a room has been furnished, and preparations made for exhibiting specimens of rocks, building stones, models of surface geology, and whatever may tend to illustrate the department. This room will soon be opened, but series of our most common rocks are still much needed. A large geological map of this and the neighboring States, geological sections, models of mines or of strata, views and photographs of scenery exhibiting remarkable geological formations are most desirable. Printed circulars have been sent to all the principal quarries of Vermont, and to the architects and stone dealers in this city, inviting donations of specimens of building stone. A valuable gift has been received from the Curator, in the large collection of volcanic minerals, made by himself, in 1864–5, in the Hawaiian Islands. It comprises many hundred specimens, and forms the most complete collection of the kind ever brought from that locality. It has been recently unpacked and, in great part, labelled and arranged for exhibition. The collection has received donations from Drs. A. C. Garratt and F. V. Hayden, and from Messrs. H. A. Lawrence, F. G. Sanborn and G. B. Towle.

The condition of the Mineralogical cabinet is very good; the specimens are all labelled and well arranged for exhibition. Considerable work has been expended upon them by the Curator, and small but valuable donations of ores and other minerals have been received from Drs. C. T. Jackson,

A. S. Packard, Jr., and H. W. Williams, Capt. Taylor and Messrs. G. A. Boardman, T. T. Bouvé, W. E. Coffin & Co., C. S. Hollowell, J. M. Horner, William Munroe and C. J. Sprague.

The necessary expenditures for construction, during the year, have doubtless been injurious to the special interests of the Museum, but as our annual income will no longer be taxed for those purposes, we may hope for larger accessions in the future. We have already taken steps in that direction by coöperating with the Smithsonian Institution in their explorations over the unsettled portion of our country. New fields of interest will thus be opened, and we shall secure for ourselves larger and more desirable results than could be gained by independent efforts alone.

ADDITIONS

TO

THE LIBRARY AND THE MUSEUM.

ADDITIONS TO THE LIBRARY DURING THE YEAR ENDING MAY 1, 1867.

Annotated Catalogue of the principal Mineral Species hitherto recognized in California and the adjoining States and Territories. By William P. Blake. 8vo. Pamph. Sacramento, 1866. *From the Author.*

Ueber die seit 27 Jahren noch wohl erhaltenen Organisations-Präparate des Mikroskopischen Lebens. Von C. G. Ehrenberg. 4to. Pamph. Berlin, 1862. *From the Author.*

Catalogue of the Genera Helix, Anostoma, Hypselostoma, Streptaxis, Tomigerus, Bulimus, Orthalicus, Partula, in the collection of A. D. Brown, Princeton, N. J. 8vo. Pamph. 1866. *From the Author.*

Lichens of California, Oregon, and the Rocky Mountains, so far as yet known. By Edward Tuckerman, M. A. 8vo. Pamph. Amherst, 1866. *From the Author.*

Prodrome of a Work on the Ornithology of Arizona Territory. By Elliott Coues, M. D. 8vo. Pamph. Philadelphia, 1866. *From the Author.*

Orographic Geology. By George L. Vose. 8vo. Boston, 1866. *From the Author.*

Description of an Ancient Sepulchral Mound near Newark, Ohio. By O. C. Marsh. 8vo. Pamph. New Haven, 1866. *From the Author.*

Der Blüthenstand der Juncaceen. Von Dr. Franz Buchenau zu Bremen. 8vo. Pamph. 1865. *From the Author.*

De la Constitution du Soleil. Par M. Émile Gautier. 8vo. Pamph. 1865. *From the Author.*

On Fucoides in the Coal Formation. By Leo Lesquereux. 4to. Pamph. Philadelphia, 1866. *From the Author.*

État Actuel de la Sériciculture et Description du Nid d'un Bombyx exotique. Par M. Henri Trimoulet. 8vo. Pamph. Bordeaux, 1865. *From the Author.*

Notes on the Zygænidæ of Cuba. By A. R. Grote. Parts I–II. 8vo. Philadelphia, 1866–7. *From the Author.*

Diptera Americæ Septentrionalis indigena. Descripsit H. Loew. 8vo. Berolini, 1861. *From the Author.*

Observations on the Origin of some of the Earth's Features. By James D. Dana. 8vo. Pamph. New Haven, 1866. *From the Author.*

On Gay-Lussite from Nevada Territory. By B. Silliman. 8vo. Pamph. New Haven, 1866. *From the Author.*

Revision of the Genus Schiedea and of the Hawaiian Rutaceæ. By Horace Mann. 8vo. Pamph. Boston, 1866. *From the Author.*

On the Young Stages of a few Annelids. By A. Agassiz. 8vo. Pamph. New York, 1866. *From the Author.*

On the Rocks and Cupriferous Beds of Lake Portage, Michigan. By Thomas MacFarlane. 8vo. Pamph. Acton Vale, 1866. *From the Author.*

Catalogue of Casts of Fossils from the principal Museums of Europe and

America, with short Descriptions and Illustrations. By Henry A. Ward. 8vo. Rochester, 1866. *From the Author.*

On the Conditions of the Deposition of Coal, more especially as illustrated by the Coal Formation of Nova Scotia and New Brunswick. By J. W. Dawson. 8vo. Pamph. London, 1866. *From the Author.*

Observations upon the Cranial Forms of the American Aborigines, based upon specimens contained in the Collection of the Academy of Natural Sciences of Philadelphia. By J. Aitken Meigs, M. D. 8vo. Pamph. Philadelphia, 1866. *From the Author.*

Geological Survey of Canada. Catalogue of the Silurian Fossils of the Island of Anticosti. By E. Billings. 8vo. Pamph. Montreal, 1866. *From the Author.*

Conchological Memoranda. List of Shells collected at Bauline's Bay, California, June, 1866. By R. E. C. Stearns. 8vo. Pamph. *From the Author.*

Observations on the Internal Appendages of the Genus Atrypa; with a Notice of the Discovery of a Loop connecting the spiral cones. By R. P. Whitfield. 8vo. Pamph. Albany, 1866. *From the Author.*

Results of an Examination under the Microscope of some Japanese Infusorial Earths and other Deposits of China and Mongolia. By A. M. Edwards. 4to. Pamph. Philadelphia, 1866. *From the Author.*

Annual Meteorological Synopsis for the year 1866. Observations taken by J. B. Trembley, M. D. 8vo. Pamph. Toledo, 1866. *From the Author.*

Liquid Stone. Extract from a Paper read before the Boston Society of Natural History. By Prof. A. L. Fleury. 4to. Pamph. 1867. *From the Author.*

Conchological Notes. By W. H. Dall. Nos. 1–2. 8vo. San Francisco, 1866. *From the Author.*

Sketch of the Mineralogy of Nova Scotia as illustrated by the Collection of Minerals sent to the Paris Exhibition, 1867. By Prof. How. 8vo. Pamph. Halifax. *From the Author.*

L. W. Schmidt's Scientific Catalogue. 8vo. Pamph. New York, 1867. *From the Publisher.*

Flora Brasiliensis. Edidit C. F. P. de Martius. Fasc. XLI. Fol. Lipsiæ, 1866. *From Mrs. B. D. Greene.*

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The Oceanic Hydrozoa; a Description of the Calycophoridæ and Physophoridæ observed during the voyage of H. M. S. "Rattlesnake" in the years 1846–50. By Thomas Henry Huxley. 4to. London, 1859.

Catalogue of Orthopterous Insects in the Collection of the British Museum. Part I. Phasmidæ. By J. O. Westwood. 4to. London, 1859.

On the Anatomy of Vertébrates. By Richard Owen. Vols. I–II. 8vo. London, 1866.

The Geographical Distribution of Mammals. By Andrew Murray. 4to. London, 1866.

On the species of the Linnæan Genus Asterias. By Thomas Say. 8vo. Pamph. 1825.

Mémoire pour servir à l'Histoire des Blattes antédiluviennes. Par Dr. Berendt. 8vo. Pamph. Paris, 1836.

Die Insekten im Bernstein, ein Beitrag zur Thiergeschichte der Vorwelt. I. Heft. Von. Dr. G. C. Berendt. 4to. Danzig, 1830.

Locustarum quædam genera Aptera nova examini submissa, G. Fischer de Waldheim. 8vo. Pamph. 1838.

Orthoptera Berolinensia. R. A. Philippi. 4to. Pamph. Berlin, 1830.

Orthoptera nova. Illustravit Franciscus L. B. Ocskay. 4to. Pamph. 1832.

Fauna der Kieler Bucht, von H. A. Meyer und K. Möbius. I. Band. Folio. Leipsic, 1865.

Symbolæ Physicæ seu Icones et Descriptiones Insectorum quæ ex Itinere per Africam Borealem et Asiam Occidentalem F. G. Hemprich et C. G. Ehrenberg. Percensuit Dr. Fr. Klug. Edidit Dr. C. G. Ehrenberg. Folio. Berolini, 1829–34.

The Natural History of the rarer Lepidopterous Insects of Georgia. By James E. Smith. Vols I–II. Folio. London, 1797.

Verhandelingen van het Bataviaasch Genootschap der Kunsten en Wetenschappen. Vols. I–III. 8vo. Batavia, 1779–81.

Tijdschrift voor Indische Taal-, Land- en Volkenkunde. Vols I–VI. 8vo. Batavia, 1854–57.

Natuurkundig Tijdschrift voor Nederlandsch Indie. Vol. I, Parts 1–6. 8vo. Batavia, 1850–51.

Allgemeine deutsche naturhistorische Zeitung. Vols. I–II. 8vo. Dresden und Leipzig, 1846–7.

Versuche und Abhandlungen der naturforschenden Gesellschaft in Danzig Vols. I–III. 4to. 1747–56.

Sitzungsberichte der Kais. Akademie der Wissenschaften. Math-nat. Classe. Bänd. I–II. 8vo. Wien, 1848–9.

Verhandlungen des naturhistorischen Vereines der preussischen Rheinlande und Westphalens. Jahrg. VI, VII, VIII; Bogen 1–16, 25–37, IX–XI. 8vo. Bonn, 1849–54.

Abdandlungen der naturhistorischen Gesellschaft zu Nürnberg. Bänd. I–II. 8vo. 1852–61.

Gesellschaft naturforschende Freunde zu Berlin. Mittheilungen aus den Verhandlungen. Jahr. I–III. 8vo. 1836–8. Schriften. Bänd. I–XI. 8vo. 1780–94. Kupfern, 4to.

Monatsberichte der K. P. Akademie der Wissenschaften zu Berlin. Aus dem Jahren 1849–51. 8vo.

Mémoires de la Société de Physique et d'Histoire Naturelle de Genève. Tom. I–VIII. 4to. 1821–39.

Memoirs of the Wernerian Natural History Society. Vols. I–IV and VI. 8vo. Edinburgh. 1811–32.

Anatomical and Pathological Observations. By J. Goodsir and H. D. S. Goodsir. 8vo. Edinburgh, 1845.

Catalogue of Shield Reptiles in the Collection of the British Museum. By John Edward Gray. Part I. Testudinata. 4to. London, 1855.

Mémoires sur les Coralliaires des Antilles, par P. Duchassaing de Fonbressin et Jean Michelotti. 2 vols. 4to. Turin, 1860–64.

Ueber Entwickelungsgeschichte der Thiere, von Dr. Karl Ernst v. Baer. Erster Theil. 4to. Königsberg. 1828.

Om de Geognostiske Forhold i en Deel af Sjelland og Naboeöerne ved G. Forchammer. 4to. Pamph. Kjöbenhavn, 1823.

Handbuch der Zoologie. Von W. C. H. Peters, J. V. Carus and C. E. A. Gerstaecker. Band II. 8vo. Leipzig, 1863.

The Record of Zoological Literature for the year 1865 (Vol. II). Edited by Albert C. L. G. Günther. 8vo. London, 1866.

Palæontographical Society. Vols. XVIII–XIX. 4to. London, 1864–5.

Johnson's New Illustrated Family Atlas of the World. Folio. New York, 1867. *By Purchase.*

Narrative of an Expedition to the Zambesi and its Tributaries; and of the Discovery of the Lakes Shirwa and Nyassa, 1858–64. By David and Charles Livingstone. 8vo. New York, 1866.

The Physiology of Man. By Austin Flint, Jr., M.D. 8vo. New York, 1866.

The History of Henry the Fifth. By G. M. Towle. 8vo. New York, 1866.

Frost and Fire. 2 vols. 8vo. Philadelphia, 1865.

The World before the Deluge. By Louis Figuier. 8vo. London, 1866.

Orographic Geology. By George L. Vose. 8vo. Boston, 1866.

Manual of Geology. By James D. Dana. 8vo. Philadelphia, 1866.

Thirty Years of Army Life on the Border. By Colonel R. B. Marcy, U. S. A. 8vo. New York, 1866.

History of England from the Fall of Wolsey to the Death of Elizabeth. By J. A. Froude. Vols. V–VI. 8vo. New York, 1866.

Curious Facts in the History of Insects. By Frank Cowan. 12mo. Philadelphia, 1865.

Geological Sketches. By L. Agassiz. 12mo. Boston, 1866.

Life of Mendelssohn, from the German of Lampadius. Edited and translated by W. L. Gage. 16mo. New York, 1865.

Mind in Nature. By Prof. H. James-Clark. 8vo. New York, 1866.

Frederick the Great and His Court. By L. Mühlbach. 8vo. New York, 1867.

The Albert Nyanza, Great Basin of the Nile and Explorations of the Nile Sources. By Samuel White Baker. 8vo. London, 1866.

A Year at the Shore. By Philip H. Gosse. 16mo. London, 1865.

Memorials of the Early Lives and Doings of Great Lawyers. By C. L. Brightwell. 16mo. London, 1866.

Life of Benjamin Silliman. By George P. Fisher. 2 vols. 8vo. New York, 1866.

Life and Letters of John Winthrop. By Robert C. Winthrop. 8vo. Boston, 1867.

The Open Polar Sea. By Dr. I. I. Hayes. 8vo. New York, 1867.

Deposited by the Republican Institution.

ADDITIONS TO THE MUSEUM FROM MAY 3, 1866, TO MAY 1, 1867.

May 16, 1866. Negative and photographs of a species of *Coscinodiscus*, by Dr. C. F. Crehore. Several Embryos of *Nyctiardea Gardeni*, from Canton, Mass., by Mr. F. G. Sanborn.

June 6. Albino muskrat from Long Point Marshes, Canada, by Dr. J. N. Borland. Forty specimens of Fossils, forty cases of Phryganidan larvæ, two hundred and twenty-five eggs, young and adult mollusca, and four insects, from Decorah, Iowa, by Mr. H. Davis. Pupa of *Libellula*, from Boston, by Mr. A. Chapman. One mammal, one specimen of *Ophiopholis bellis*, twelve crustacea, seventeen reptiles, five insects, six worms, and forty-six fish, by Mr. F. W. Andrews. Forty specimens of Cryolite and other minerals, from Greenland, by exchange with Mr. C. S. Hollowell. A collection of sixty-five specimens of minerals from various localities, by Dr. C. T. Jackson. A specimen of *Pœcilichthys cœrulea* Storer, from Indianapolis, Ind., by Mr. W. B. Fletcher. A specimen of *Timarcha*, from Egypt, by Mr. C. K. Stevens.

June 20. Specimens of Nodular Copper Glance and Sulphuret of Copper, from Nova Scotia; Azurite, Malachite, Eurbescite, and vitreous Copper ore, from San Domingo, by Dr. C. T. Jackson. An albatross caught off the Cape of Good Hope; an owl taken sixty miles from Cape Horn; and specimens of Stilbite and Mesotype from Lyttleton, New Zealand, by Capt. Taylor. A young lion, by M. J. F. Wallboum. Specimens of Cryolite, Kyanite, Vermiculite and Pyrophyllite from the vicinity of Philadelphia, by Mr. J. M. Horner. A specimen of *Æschna*, by Mr. John Maury. Two Calabar Beans, by Dr. A. A. Gould. Hanging moss from the Southern States, by Mr. C. L. Brown. One hundred and eighty specimens of coleoptera from Lower California, by Mr. S. Hubbard. A *Remora* and an African Locust from the Nile River; sand from the Desert of Sahara; and a Horned Toad from the interior of Western Australia, by Dr. A. C. Garratt. A specimen of *Mesodesma arctatum* from Manchester beach, by Mr. S. Goldsmith. A bird from Hart's Location, N. H., by Dr. S. A. Bemis. Three echinoderms, seven fish, twelve birds, one hundred corals (twelve species), seven specimens of seeds and fungi, one skull and skeleton (in part), six *Bostrichidæ*, a quoit-like stone used in a game, a joint of bamboo, ten specimens of native Kapas, one specimen of *Argyroxiphum*, fruit of *Cucurbitaceæ*, forty miscellaneous fruits, one hundred insects, and several hundred specimens of lavas from the Hawaiian Islands; ten galls from Virginia City, Nevada; and twenty-five specimens of shells, by Mr. Wm. T. Brigham.

October 3. Two specimens of *Pimpla lunator* Fabr., and one of *Thyreus Abbotti*, from Boston, by Mr. T. T. Bouvé. Larva of *Deilephila*, from Boston, by Capt. W. T. M. Ball. An egg contained within two shells, from Roxbury, by Mr. T. J. Lee. Twenty-five fossil crabs, carboniferous? from Manhattan, Kansas, by Mr. B. F. Madge. Skull of an Esquimaux dog, from Henley Harbor,

Labrador; two Fox skulls, skeleton of a Bat, and skeleton of a *Rana*, from Concord, Mass., by Mr. H. Mann. Spirifers from an artesian well in Bothwell, C. W., by Mr. H. A. Lawrence. Massive garnet, from Arrowsic Island, Bath, Me., by Dr. A. S. Packard, Jr. Larva of *Cassida aurichalcea*, from South Danvers, by Mr. Benj. D. Hill, Jr. Ore of Antimony, from New Brunswick, by Mr. G. A. Boardman. One hundred and twenty-five specimens of minerals and ores, from Colorado, by Mr. C. J. Sprague. The skin of a large snake from Cuba, and a *Geotrupes*, from Bristol, R. I., by Mr. R. C. Greenleaf. A lower jaw and tibial bones of an Indian, from a mound in Fernandina, Florida; skull of a pig from Fernandina, Fla.; Coral from Florida Reefs; fossil Fish and Cephalopod, from Mt. Lebanon, Syria; Eagle claws and skull of a skunk, from Williamstown, Mass.; clay burrowed by *Termes frontalis* Hald., from Salem, Mass.; and two hundred and fifty specimens of Mollusca in alcohol, from New Braunfels, Texas, by Mr. S. H. Scudder. Shell ornament, from the West Indies, by G. H. Brown, M. D. Human fœtus, by Dr. W. J. Merriam. Six wild strawberries, from West Plymouth, N. H., by Dr. C. Pickering. Two hundred and fifty vegetable substances and fruits, from Bombay, by Mr. H. H. Rönne. Two specimens of *Trichostema dichotomum* var. *rubellum*, from Manchester, Conn., by Mr. C. H. Olmstead. Five specimens of Algæ, from Martha's Vineyard, by Prof. Gunning. Thirty specimens of birds, from India, deposited by Mr. Horace Mann. The bones of an elephant, by purchase.

October 17. Two bones of ray, a hog-nosed snake, an embryo of a shark, and three young crabs, from Cape Cod, by Mr. F. G. Sanborn. Twenty-three corals, from the East Indies, by Capt. R. C. Adams. Cast of a skull of a small Hippopotamus, from Liberia, by the Academy of Natural Sciences, Philadelphia. A fragment of bone, from Oregon, by Dr. H. C. Perkins. A specimen of *Blatta americana*, from East Indies, by Mr. C. Stodder. Nidus of Ichneumonidans, from Jamaica, by Dr. H. Bryant. Twelve specimens of *Gnaphalium leontopodium*, from the Tyrol and Erzgebirge, Saxony, by Mr. S. H. Scudder. Ten specimens of fruit of Sandwich Island Palm, and three fungi, from the Hawaiian Islands, by Mr. H. Mann. Bark of Australian Cinnamon, and five specimens of the fruit of Banksia, from Australia, by Dr. Ferd. Müller. Four hundred and fifteen shells, a barnacle and a stone adze, from the Hawaiian Islands; eight corals and nine shells, from Micronesia; and five hundred and seventy-six Mollusca, from the Marquesas Islands, by Rev. Edward Johnson.

November 7. A stone sinker, used by the Indians, from Martha's Vineyard, by Mr. J. C. J. Brown, Jr. Two lizards, three spiders and three crabs, from San Francisco, by Mr. C. A. Stearns. A spider, from Bengal, by Mr. H. H. Rönne. Flower-stalk of the date palm, from the Hawaiian Islands, by Mr. W. T. Brigham. Thirty-four specimens of birds, mostly from Malacca, by Mr. N. P. Hamlen.

November 21. Skull of *Felis domesticus*, Boston, by Dr. F. H. Brown. Specimens of *Coscinodiscus robustus*, *Auliscus cœlatus*, *Auliscus Hardmanianus*, *Glyphodiscus stellatus*, *Actinoptychus splendens*, *Actinoptychus nov. sp.*, and a Diatom from California, by Mr. C. G. Bush. A Crustacean, by Mr. R. C. Greenleaf. Three skins and two skeletons of mammals, from Belize, Central America, by Dr. Henry Bryant. A mineral, from Colorado, by Dr. H. W. Williams.

December 5. A fish, from the Grand Banks of Newfoundland, by Capt. N. E. Atwood.

December 19. Touchstones used by the old Italian goldsmiths for testing gold, by Mr. Wm. Munroe. Three specimens of mollusca and eggs and one Ray, from Nantucket, by Mr. H. D. Child.

January 2, 1867. Three Unionidæ and thirteen insects, from North Wren-

tham, by Mr. Luther Hills. A hybrid between Black and Mallard Ducks, and a Mallard Duck, from Lake St. Clair, by Major Lewis Cabot. A Hawk, from Canton, Mass., by Dr. S. Cabot. Wool from the Fleece of a Cotswold Ram, from Santa Barbara, Cal.; a fossil Crab and Drawings of a *Trachypterus*, from Neeah Bay, Washington Territory, by Mr. James G. Swan. Humerus of Indian, from the banks of the Merrimac, by Dr. W. M. Ogden.

January 16. A Bat, from Boston, by Miss Carrie Porée. Six specimens of fossil *Calamites*, from Pictou, N. S., by Mr. Joseph Wagner. A specimen of Bazanite, by Mr. Wm. Munroe.

February 6. Five specimens of fish from Lake Winnipisiogee, by Mr. G. D. Oxnard. Fungus on a Caterpillar from the Philippine Islands; and a specimen of *Diapheromera femorata*, from Cohasset, by Dr. S. Kneeland. A Collection of fourteen thousand, two hundred and eighty-four specimens of shells, by bequest of Miss Sarah Pickering Pratt. A Wasp's nest and two nests of Birds from North Wrentham, by Mr. Luther Hills. A shell from the Orchilla Islands, by Mr. David Baker. Fragment of a grape-vine eaten by *Termites*, with a section, from Salem, Mass.; and three specimens of *Faiderbia Bauhinia* Guérin, from West Africa, by Mr. S. H. Scudder. A slab and piece of shell marble, from Hudson River Marble Quarries, Greenport, Columbia Co., N. Y., by Mr. George B. Towle. A specimen of Coal worn by attrition to a globular form, by Rev. I. H. Holton.

March 6. Six specimens of minerals, from various localities, by Mr. T. T. Bouvé. A Sponge, taken from a depth of thirty fathoms, off Cape Cod, by Capt. N. E. Atwood. Three specimens of Guaranà, from Brazil, by Dr. B. E. Cotting. Seven specimens of *Lithocolletis rofinicella* Clem., from Beverly, by Mr. Edw. Burgess. Radius of an albatross, from Cape Town, Africa, by Mr. G. R. Hemming. Sixteen fossils, from Dacotah; a Pipe Stone, from Pipe Stone Quarry; and a specimen of Kaoline (manufactured) from Chester Co., Penn., by Dr. F. V. Hayden. Casts of the jaws of *Titanotherium Proutii* and *Megalonyx Jeffersonii*, by the Academy of Natural Sciences of Philadelphia. A specimen of *Polycistina*, from deep sea soundings, north of Cuba, by Mr. C. G. Bush. Three hundred specimens of fossils, from the Bad Lands, Nebraska, by purchase.

March 20. Thirty-five specimens of fossils, from the Western States; and a Gar-Pike, from Lake Michigan, by Mr. C. G. Bush. Egg-shell, found inside of the white of the egg of a domestic fowl, by Mr. E. L. Sturtevant. A lizard, from Calcutta, by Mr. R. C. Greenleaf. Fifty-two nests and one hundred and twenty-one eggs, from Massachusetts, by Mr. B. P. Mann.

April 4. Five osteological specimens, a skeleton of a pony, a model of a horse, and three botanical specimens, by Mr. Francis Brooks. Two pairs of elk horns, from California, by Mr. Joseph Ballard.

April 17. A long-tailed duck, from the vicinity of Boston, by Mr. H. L. Lawrence. Two flying squirrels, from Hardwich, Mass., by Mr. Sam. Mixter. A specimen of *Certhiola Cabotii* Baird from Yucatan, by Dr. S. Cabot. A *Limax* from E. Somerville, by Mr. W. L. Robinson. An arrow-head and stock from Peter's Falls, W. Andover, and glass from the Portland fire, by Mr. F. G. Sanborn. A piece of the heart of a spruce, by Mr. Haines. *Calamites* from the Pudding Stone of Taunton, by Dr. J. Wyman. A sphere of vegetable fragments from a pond in Lincoln, by Dr. E. P. Colby. Twenty-five specimens of fossil mollusca from the Greensand of New Jersey, by Dr. C. T. Jackson. Six mollusca and four seeds from Ceylon, by Dr. S. Kneeland. A rose-breasted Merganser from Ipswich River, by purchase.

REPORT OF E. PICKERING, TREASURER,

ON THE

FINANCIAL AFFAIRS OF THE SOCIETY,

For the year ending April 30, 1867.

The Receipts and Expenditures for the year have been as follows:

Receipts.		
Dividends and Interest		$9,843.08
Annual Assessments		1,200.00
Admission Fees		165.00
Courtis Fund Income		180.00
Walker Fund " (one half.)		1,233.15
H. F. Wolcott Fund Income		365.00
S. P. Pratt " "		285.00
Total		$13,281.23
Expenditures.		
New Building, Furniture and Grounds.	$2,404.31	
Repairs of New Building	401.90	
Cabinet	1,281.53	
Library	579.62	
Library Fund	208.86	
Memoirs and Proceedings	1,364.46	
Salaries and wages	3,130.10	
Fuel	406.40	
Insurance	138.58	
Appropriation for Foreign Periodicals	161.14	
General Expenses	813.55	$11,022.93
Excess of Receipts over Expenditures		$2,258.30

The following is a statement of the Property of the Society, exclusive of the Cabinet and Library which are not susceptible of an accurate valuation.

New Building.		
Building and Furniture, at cost, as per last Report .	$110,037.15	
Expended during the year	2,404.31	$112,441.46
Bulfinch St. Estate Fund.		
Note secured by mortgage	$15,000.00	
U. S. 7.30's	5,550.00	
Cash in the hands of Trustees	118,21	
		20,668.21
Courtis Fund.		
Notes Receivable secured by mortgage		3,000.00
There is also due to this Fund from the Treasury the sum of $8,339.71.		
Walker Fund.		
Notes Receivable secured by mortgage	$41,105.00	
Cash in the hands of Trustees	1.21	
		41,106.21
H. F. Wolcott Fund.		
$5000 U. S. Treasury 7.30 Notes		5,000.00
S. P. Pratt Fund.		
$10,000 N. Y. Central Railroad Bonds, 6's . . .		9,400.00
W. J. Walker Bequest.		
17 Shares Bates Manufacturing Co. per sh. $130	$2,210.00	
35 " Everett Mills . . . . . " 146	5,110.00	
30 " Hamilton Woollen Man. Co. . . " 275	8,250.00	
1 " Lawrence Man. Co. . . . . "	750.00	
80 " Washington Mills . . . . . " 150	12,000.00	
12 " Cocheco Man. Co. . . . . " 750	9,000.00	
2 " Lowell Man. Co. . . . . " 900	1,800.00	
4 " Laconia Man. Co. . . . . " 1150	4,600.00	
3 " Pepperell Man. Co. . . . . " 1000	3,000.00	
25 " Essex Co. . . . . " 108	2,700.00	
100 " Old Colony and Newport R. R. Co. " 90	9,000.00	
110 " Vermont and Canada R. R. Co. . " 100	11,000.00	
3 " Cape Cod R. R. Co.. . . . . " 65	195.00	
11 " Neptune Ins. Co. . . . . " 170	1,870.00	
18 " Boston Ins. Co. . . . . " 100	1,800.00	
$10,000 Vermont & Canada and Vermont Central Chattel Bonds.	10,350.00	
$10,000 Albany City Bonds	9,350.00	
$10,000 Chicago & N. Western Railroad Eq. Bonds .	10,000.00	
		102,985.00
Miscellaneous.		
Unsettled Accounts		57.92
Total		$294,658.80
Deduct Indebtedness	$3,579.50	
Less Cash in hands of Treasurer	3,374.11	
		205.39
Net value of Property		$294,453.41
Value of Property as estimated May 1, 1866 . . .		279,784.43
Increase		$14,668.98

Since my last Annual Report we have received the additional sum of $10,000 from the executors of the estate of Dr. W. J. Walker. The distribution of the residue of his devise awaits the decision of the Supreme Court of the United States upon the questions which have arisen in the settlement of his estate. The bequest by Miss S. P. Pratt of $10,000 in addition to her cabinet of shells, it will be observed, has been paid over to the Society. The bequest of $20,000 by the late Paschal P. Pope has been also announced.

I estimate the necessary expenses of the ensuing year at the same amount as those of the past year.

By a vote of the Council the income of the Bulfinch Street Estate Fund is to be reserved by the Trustees for accumulation as a Building Fund.

All of which is respectfully submitted,

E. Pickering, Treasurer.

REPORT OF THE TRUSTEES

ON THE

TRUST FUNDS OF THE SOCIETY,

FOR THE YEAR ENDING APRIL 30, 1867.

Dr. THOS. T. BOUVÉ, CHAS. J. SPRAGUE, AND EDWARD PICKERING, TRUSTEES OF THE COURTIS FUND IN ACCOUNT WITH THE BOSTON SOCIETY OF NATURAL HISTORY. **Cr.**

1867. Feb'y 4.	To Cash received	$180.00	1867. Feb'y 4.	By Cash paid to Edward Pickering, Treasurer of the Society, towards General Expenses	$180.00

Errors Excepted. Boston, April 30, 1867.

THOS. T. BOUVÉ,
E. PICKERING,
CHAS. JAS. SPRAGUE, } TRUSTEES.

April 30, 1867. The Property of the Courtis Fund on date consists of	
Indebtedness of the Society for cash loaned the Treasury without interest	$8,839.71
Note secured by mortgage on the Warren Street Chapel	3,000.00
	$11,839.71

Dr. THOS. T. BOUVÉ, CHAS. J. SPRAGUE, AND EDWARD PICKERING, TRUSTEES OF THE WALKER PRIZE FUND, IN ACCOUNT WITH THE BOSTON SOCIETY OF NATURAL HISTORY. **Cr.**

1866. May.	To Cash rec'd from Trustees of "The Walker Fund," one half of the whole am't rec'd by them to this date, less some special expenses paid by them on this acct., all in accordance with the contract between Dr. Walker and the Society . .	$1,380.10	1866. May.	By Cash paid for $1000 U. S. Bonds $1,002.50 116 days Int. 23.20 $300 U. S. Bonds 300.75 85 days Int. 5.10	$1,331.55
Sept. 20.	" rec'd, Interest on Bonds . . .	47.45	Sept. 20.	" paid for $400 U. S. Bonds and Int.	431.76
" 21.	" rec'd from Trustees Walker Fund one half am't rec'd by them to date	375.00	1867. Feb.	" " $300 " "	319.11
Oct. 6.	" rec'd from Trustees of Walker Fund one half am't rec'd by them to date	241.57	March.	" " $350 " "	372.00
1867. Feb. 7.	" rec'd for Interest on Bonds . .	61.55	April 5.	" " $250 " "	266.62
March 13.	" rec'd from Trustees Walker Fund	375.00			$2,721.04
April 5.	" " " " " "	241.58	April 30.	" Balance to acc't on date . . .	1.21
		$2,722.25			$2.722.25

Errors Excepted. Boston, April 30, 1867.

THOS. T. BOUVÉ,
E. PICKERING,
CHAS. JAS. SPRAGUE, } TRUSTEES.

April 30, 1867. The Property of this Fund on date consists of United States Bonds which have cost	$2,721.04
Cash balance on date	1.21
	$2,722.25

Dr. THOS. T. BOUVÉ, CHAS. J. SPRAGUE, AND EDWARD PICKERING, TRUSTEES OF THE WALKER FUND, IN ACCOUNT WITH THE BOSTON SOCIETY OF NATURAL HISTORY. **Cr.**

1866. April 30.	To balance of this Acc't as ren'd on date .	$1,380.10	1866. May.	By Cash paid to Trustees of Walker Prize and Special Exp's Fund, balance on hand April 30th, this being one half of the whole sum rec'd from the commencement of the Walker Fund to date,—less sundry amounts charged for articles rightly payable from this Fund	$1,380.10
Sept. 21.	To Cash received six months' interest on Mortgage Note for $25,000 .	750.00	Sept. 21.	" paid Treasurer of the Society one half of am't rec'd on date . .	375.00
Oct. 6.	" received six months' interest on Mortgage Note for $16,105 .	483.15	"	" paid Trustees Walker Prize and Special Ex. Fund, one half of am't rec'd on date . . .	375.00
1867. March 13.	" received six months' interest on Mortgage Note for $25,000 .	750.00	Oct. 6.	" paid Treasurer of the Society .	241.58
April 5.	" received six months' interest on Mortgage Note $16,105 . .	483.15	"	" paid Trustees Walker Prize and Special Ex. Fund . . .	241.57
		$3,846.40	1867. March 13.	" paid Treasurer of the Society .	375.00
			"	" paid Trustees of Walker Prize and Special Ex. Fund . . .	375.00
			April 5.	" paid Treasurer of the Society .	241.57
			"	" paid Trustees Walker Prize and Special Ex. Fund . . .	241.58
					$3,846.40

Errors Excepted. Boston, April 30, 1867.

THOS. T. BOUVÉ,
E. PICKERING,
CHAS. JAS. SPRAGUE, } TRUSTEES.

April 30, 1867. The Property of this Fund on date, consists of	
Note of March 1st, 1865, payable in ten years, secured by mortgage, for	$25,000.00
Note of April 7th, 1865, payable in five years, secured by mortgage on house in Beacon street . .	16,105.00
	$41,105.00

Dr. Thos. T. Bouvé, Chas. J. Sprague, and Edward Pickering, Trustees of the Bulfinch Street Estate, in Account with the Boston Society of Natural History. **Cr.**

1866. May.	To Cash received of Mrs. Clarke, for rent of house one and one-third mos., to 24th inst.		$111.11	1866. May.	By Cash paid for water rent	$20.00	
	Taxes for past six months		158.00		Less rec'd of Mrs. Clark	10.00	$10.00
	Old Carpeting		9.89	"	" paid Alex. Wadsworth's bill surveying Estate preparatory to sale		15.00
June.	" rec'd from the Estate sold May 24th, at auction to J. B. Smith, the same being with the consent in writing of the Supervisors	$20,700		June.	" paid W. J. Bowditch, bill for drawing deed and copying	$27.40	
					Stamps	21.00	
					one half recording Mortgage	1.50	49.90
	Less am't of Mortgage Note rec'd in part payment as per agreement, three y'rs, Int. payable semi-ann'lly	15,000		"	" paid Henshaw & Bro., bill commissions on sale	$103.50	
			5,700.00		Tax one forty-seventh	51.75	
					Advertising and Plans	52.00	207.25
" 14.	" rec'd Int. one day on U. S. Bonds purchased		1.11	" 14.	" paid for $5,550 U. S. 7.30 Notes, at 102 13-16ths		5,706.10
Dec. 21.	" rec'd Int. on U. S. Bonds		202.57	Dec.	" paid for $500 U. S. Notes		526.22
" "	" rec'd of J. B. Smith, six mos. Int. on his Note acc't $15,000		450.00				$6,514.47
			$6,632.68	1867. April 30.	" Balance on date		118.21
							$6,632.68

Errors Excepted. Boston, April 30, 1867.

THOS. T. BOUVÉ,
E. PICKERING.
CHAS. JAS. SPRAGUE, } Trustees.

April 30, 1867. The Property of this Fund on date consists of

J. B. Smith's Mortgage Note	$15,000.00
U. S. 7.30 Bonds	6,050.00
Cash on hand	118.21
	$21,168.21

Dr. THOS. T. BOUVÉ, CHAS. J. SPRAGUE, AND EDWARD PICKERING, TRUSTEES OF THE WOLCOTT FUND, IN ACCOUNT WITH THE BOSTON SOCIETY OF NATURAL HISTORY. **Cr.**

1866. June 20.	To Cash received, Interest on U. S. Bonds	$182.50	1866. June 20.	By Cash p'd Treasurer for purchase of Books	$182.50
Dec. 19.	" " " " "	182.50	Dec. 19.	" " " " "	182.50
		$365.00			$365.00

Errors Excepted. Boston, April 30, 1867.

THOS. T. BOUVÉ,
E. PICKERING,
CHAS. JAS. SPRAGUE, } TRUSTEES.

April 30, 1867. The Property of this Fund on date consists of
$5,000 U. S. Bonds 7.30, 1865, Nos. 169,068–169,072 inclusive $5,000.00

Dr. THOS. T. BOUVÉ, CHAS. J. SPRAGUE, AND EDWARD PICKERING, TRUSTEES OF THE PRATT FUND, IN ACCOUNT WITH THE BOSTON SOCIETY OF NATURAL HISTORY. **Cr.**

1867. April 17.	To Cash received, three per cent. on $10,000 New York Central Railroad Bonds, less Tax	$285.00	1867. April 17.	By Cash paid to the Treasurer of the Society towards the payment to be made by him for studying and arranging in scientific order the Conchological Collection in the new Cases	$285.00

Errors Excepted. Boston, April 30, 1867.

THOS. T. BOUVÉ,
E. PICKERING,
CHAS. JAS. SPRAGUE, } TRUSTEES.

April 30, 1867.	The Property of this Fund on date consists of 10 New York Central Railroad Bonds, Nos. 19, 59, 65, 66, 67, 68, 69, 70, 71 and 72, @ $1000 each. Interest six per cent., payable semi-annually	$10,000.00

OBITUARY NOTICE

OF

DR. AUGUSTUS A. GOULD,

PREPARED BY DR. JEFFRIES WYMAN ON BEHALF OF A COMMITTEE APPOINTED FOR THAT PURPOSE.

Augustus Addison Gould was born in New Ipswich, New Hampshire, on the 23d of April, 1805, among the high hills and under the shade of one more prominent than the rest, which helped to form what he calls the amphitheatre that surrounds the town. His early life was passed there, and as soon as he was old and strong enough to labor the larger part of the year was given to his father's farm, and the rest to the common school. At the age of fifteen he took the whole charge of the farm; nevertheless a part of the year was devoted to study, and some progress was made in the classics. By the careful husbanding of the odds and ends of time and a year's teaching at an academy, he was prepared to enter college, and entered at Cambridge in 1821. With his college life came a struggle, the forerunner of many such by which his strength was to be tried. He had already come to know something of the barrier which limited means had put between himself and the things he aspired to, and now this assumed larger proportions, such as to most persons would have been disheartening. College duties and exercises demanded his time, nevertheless his education must be paid for, and he must do largely towards earning the means; and so by strict economy, by performing various duties for which indigent students received compensation, and also by hard work in vacations and on those days which others gave to

relaxation, he says he at length fought his way through, and attained to respectable rank.

In college he was noted among his classmates for industry, and it was there, too, that his taste for natural history began to show itself. He became familiar with the most of our native plants and to the end of life never lost his love for them. After leaving college, he held the office of private tutor in Maryland, and at the same time began the study of medicine. The rest of his pupilage was passed in Boston, and the last year of it at the Massachusetts General Hospital as house student. He was graduated in medicine in 1830, and at once began the practice of his profession, having given good grounds to his friends for expecting future eminence. But his struggles with poverty were not yet ended. Until his profession could yield him a support, he must go out of it, and did, to earn the necessaries of life. To this end he undertook burdensome tasks; one of them, the cataloguing and classification of the fifty thousand pamphlets in the library of the Boston Athenæum, was Herculean, as any one may see who will take the trouble to look over the four large folio volumes he wrote out, monuments of his patient industry and handiwork, and for which he got only a pitiful return.

The study of natural history was nearer to his heart than all other pursuits, and to that he could always turn, and did, whenever he could command a few spare hours or moments to do so. As a matter of course, he became a member of this Society. This was soon after its organization, and to the time he died, he labored for us without stint. When his studies began to assume a methodical shape, his first investigations were in the class of insects, of which, at one time, he had a large collection. Among his first published works was a monograph on the Cicindelæ of Massachusetts, printed in 1834, and in 1840 he published an account of the American species of shells belonging to the genus Pupa, in regard to which he found much confusion. These shells are very small, and Mr. Say, who named all the species previously described, gave no figures, and consequently naturalists fell into error. "I have received from our best conchologists,"

Dr. Gould says, "a single species under four of the names that Mr. Say applied to as many different species." Dr. Gould then points out how, by the use of the microscope, and a careful study of their minuter details, the classification of them might be improved. This paper was illustrated by about thirty figures carefully drawn by himself, with the aid of the microscope.

In 1841, he read before this Society a paper entitled "Results of an examination of the species of shells of Massachusetts, and of their Geographical Distribution." This is the more noteworthy since the geographical distribution of animals had at that time attracted but little attention, and none amongst us. Now it involves one of the most important zoölogical problems. From his examination it appeared that of the shells found within the borders of the State, forty-two were of land or fresh water, and two hundred and three of marine origin. While some of the marine species are found on the transatlantic shores, he thought that all the fresh water or land species were imported. Animals found in territories widely separated by salt water, appear to have been created distinct, and ever remain so, unless mingled by design or accidental transfer.

Dr. Gould also points out in this paper the influence of shore outlines, and shows from a comparison of species, that Cape Cod, which stretches out into the sea in a curved direction some forty or fifty miles, forms to some species an impassable barrier. Of two hundred and three species, eighty do not pass to the south, and thirty have not been found to the north. In the same paper he calls attention to the importance of the fact that certain species appear and disappear suddenly, and of the necessity, in order to construct a correct catalogue of the shells of any region, to extend observations through a series of years, a consideration which many naturalists, even of the present day, might profit by. In the spring of 1830, *Osteodesmus* was strewed upon Chelsea Beach in great number, and of very large size, but had never been observed there before, and has scarcely been seen since. *Cyprina Icelandica*, *Solemya velum*, *Varenius gemma* and *Margarita arctica*, also present instances of periodicity at long intervals. Dur-

ing the winter of 1838–39, *Nucula thraciæformis* was frequently found in the stomachs of the sand-dab, but search for them since has been almost fruitless.

One of the first results of the joint action of the members of this Society, and of which it has more reason to be proud than any other, was the part taken by some of them in the series of admirable reports on the natural history of the State, presented to the General Court in compliance with a legislative enactment. The report on the Trees was by Mr. George B. Emerson, then President of the Society, on Fishes, by Dr. D. H. Storer, on Insects Injurious to Vegetation, by Dr. T. W. Harris, and on the Invertebrate Animals, excepting insects, by Dr. Gould. They at once gained for their authors wide-spread reputation.

The Molluscs were Dr. Gould's favorite subjects for study, and his attention was chiefly given to them. Up to this time, few if any attempts had been made to give as complete a zoölogical survey as practicable of any particular region of the United States. As regards the Molluscs, the descriptions of Say, Conrad and others, pioneers in conchology, pertained more to the Middle and Western States, than to New England. Their writings were fragmentary and scattered through the narratives of travels, journals of science, and even newspapers. It was no small labor, therefore, to become acquainted, merely as a preparation for his task, with the writings of his predecessors. To make his report as complete as possible, and to ascertain what changes in the classification of Molluscs recent important progress growing out of the study of them would indicate, he opened correspondence for information and exchanges with European naturalists interested in the same branch of study, who obligingly and courteously lent their aid, and out of this correspondence grew up long continued friendships.

The report fills a volume of nearly four hundred pages, illustrated by more than two hundred figures skilfully drawn from nature by himself. "Every species described," he says, "indeed, almost every species mentioned, has passed under my own eye. The descriptions of species previously known, have been written anew, partly that they might be more mi-

nute in particulars, and partly with the hope of using language somewhat less technical than is ordinarily employed by scientific men." The number of species described was about two hundred and seventy-five of Molluscs and nearly one hundred of Crustaceans and Radiates.

As a contribution to zoölogical science, this report gave him an honorable name among the the naturalists of Europe and America, and so he attained to eminence.

Dr. Gould edited the admirable work entitled "The Terrestrial Air-breathing Molluscs of the United States," prepared, but left unfinished at the time of his death, by his intimate friend, Dr. Amos Binney, formerly the respected president of this Society, and whose name we hold in grateful remembrance, not only for his contributions to science, but for the munificent bequest which fills so large a space on the shelves of our library.

The plan of this work was broad and philosophical, passing far out of the region of generic and specific technicalities into the wider subjects of the principles of classification, of the geographical distribution of genera and species, and the causes influencing it, of zoölogical foci or points of origin, geological relations, habits, faculties and anatomical structure. Its incomplete state, the fact that many of the species collected by Dr. Binney in the southwestern States and Texas, had not been described by him up to the time of his death, and the changes made by more recent observations rendered the editorship of this work no sinecure. No one could be found more fit for the task, or more worthy to bring before the world the labors of a deceased friend.

In 1848 he was associated with Prof. Agassiz in the preparation of the Principles of Zöology.

His largest and most important contribution to natural history was the description of the shells of the United States Exploring Expedition. This was prepared under circumstances somewhat embarrassing. The collection was not made by himself, but by the late Capt. James P. Couthouy, well remembered as one of the most zealous and active members of this Society. Capt. Couthouy had drawn up full notes on the external characters of the soft parts, habits,

geographical distribution, and on other important points. Before the voyage was completed he left the expedition, but the notes and collections were sent to Washington. The former were unaccountably lost, and no trace of them was found. The collections, when they came into the hands of the Navy Department, were repacked by incompetent hands, the arrangement of them disturbed, labels in many cases lost, and the whole thrown more or less into confusion. Dr. Gould was called upon to save the wreck, but in accepting the task was obliged to submit to various arbitrary restrictions, and to leave undone many things he deemed of much importance. Fully appreciating the value of a knowledge of the internal structure of the animals, and knowing too well the folly of attempting to find all the characters for a zoölogical description in the shell alone, he expresses his regret at the outset that full dissections and delineations of the internal features had not been directed or allowed. This was all the more to be regretted, since there was a great abundance of material for the required investigations.

Agreeably to his instructions, the work is almost wholly confined to generic and specific descriptions. In the introduction, however, he presents several generalizations of importance. By a careful comparison, he shows that Mollusca are confined generally to definite districts or areas. Descriptive writers have frequently given support to opposite views, and have fallen into error from not having taken proper care to ascertain the locality from which certain species came, a determination which is now considered of such prime importance. Shells purchased in the Hawaiian Islands are described as denizens of these islands, notwithstanding they may have been carried there from far off places. New England shells which have been sent to the western coast of America, have been known to come back in the way of exchanges, as natives of the Pacific shores. Errors have also been committed by attempting to decide the identity of species from distant places, by the shell alone, when observation has proved this in many cases impossible. When such, and other sources of error, are eliminated, the number of

apparently identical species from widely different sources rapidly diminishes. In fact the doctrine of the local limitation of animals meets with so few exceptions, that we admit it as an axiom in zoölogy, he says, that species resembling one another from widely diverse localities, especially if a continent intervenes, and if no plausible means of communication can be assigned, are different until their identity can be proved. It is true that some species are more or less cosmopolite, as the Cypreas, and as at present understood, do not appear to be limited by seas, while others become cosmopolite by transportation, as certain Helices, which attach themselves to the water-casks of ships, and thus are carried around the world.

Another general consideration, and closely related to geographical distribution, grows out of the fact that the shells from definite regions have peculiarities of external form and color, of what may be called style, just as have the human races from different parts of the world. Thus, he says, we distinguish the loose, colorless structure of the northern species, the stony, corroded and livid New Zealanders, and the polished and absolutely perfect specimens from the coral seas.

Another generalization illustrated by the ample stores of the Expedition, is the occurrence of analogous species in coordinate regions, though the species themselves are absolutely distinct; in confirmation of which he gives a list of some thirty-two species found on the eastern and western coasts of the United States.

Lastly, it is shown by a careful comparison of the land shells of the Pacific islands, how one is helped in drawing inferences as to the lands which once occupied the area of the Pacific, and how, in consequence of their submergence, their mountain peaks, which now alone project above the surface of the water, constitute these islands. The Samoa and Friendly Islands give evidence of such relation in having identical species.

The Otia Conchologica was the last of his printed volumes, but this was merely a reprint in a condensed form of the descriptions of species of shells previously published separately in different works. Besides the works already men-

tioned, there is a long catalogue of communications made to the Boston Society of Natural History, and which is appended to this notice, which may be referred to as showing that he did not allow himself to become a mere specialist, but kept his mind awake to the relation of individual forms to higher and more general truths.

We must not forget that Dr. Gould was a member of the medical profession, and that his time was of necessity chiefly devoted to this, while the scientific labors we have been considering were the yield of spare moments made useful. He was an active member of the medical societies of this city and of the State, and held offices of trust in them. The Massachusetts Medical Society conferred on him the honors which it has to bestow upon its fellows. In 1855 he delivered the annual address, which was marked for the soundness of its views and the characteristic clearness and elegance with which they were presented. He took for his text the advice of Harvey to the Royal College of Physicians of London, when he founded the annual oration which bears his name, and in which, among other things, he enjoins upon the orator "an exhortation to the members to study and search out the secrets of nature by the way of experiment." Dr. Gould was elected president of the Society, and his term of office ended within a few months of his death. He was for several years one of the physicians of the Massachusetts General Hospital, was an efficient member of the Boston Society for Medical Improvement, where he often communicated valuable observations, and took an active part in its discussions. He labored much and long in preparing the vital statistics of the State from the official returns.

At one of the meetings of the National Academy of Sciences, of which he was a member, he presented an important paper on the distribution of certain diseases, especially consumption, in reference to the hygienic choice of a location for the cure of invalid soldiers. The census of 1860 gave the means of arriving at a definite result, and of showing that the mortality from the disease mentioned was greatest in the north, and diminished southwards almost as regularly as the States could be called. It causes about twenty-nine per cent.

of all the deaths in Maine, and only three per cent. of those in Arkansas. Infirmaries established with the idea of sending patients to those regions where the disease to be treated is presented in its mildest aspect, must be far more successful than the ordinary method of mingling together invalids suffering from all sorts of infirmities.

As a citizen, Dr. Gould made a principle of going out of the ordinary routine of life to lend a helping hand wherever it was desired and he could. He served the public in many capacities; in the religious society of which he was from early life a member, and in the public schools where he took an active interest in all attempts to improve the ways and means of instruction. He from time to time gave public lectures, and although in this capacity he could not be said to be brilliant or highly accomplished, yet his unostentatious manner and simplicity, his knowledge of his subject and hearty interest in it, always gained him attentive listeners, who went away instructed.

What can be said by way of acknowledgment of the unrequited work he did for us? of his services in the formation of the cabinet, and in promoting the interests of the Society in a hundred ways, above all in the drudgery which only ended with his life, his aid in preparing for the press and in superintending the publication of the various volumes printed by the Society, from the first to the last?

What has now been said relates only to some of the more tangible features of his principal works, leaving out of sight the industry, the critical acumen, the tact and perceptive power required to prepare them. This we can never appreciate, nor the difficulties under which his work was done. One could only do this by watching his patient studies in the intervals of professional calls, or as he labored at early dawn or late at night in the hours stolen from sleep. Though often an invalid, the sickness must have been irksome indeed, which could restrain him from his accustomed work.

In his temperament he was genial, and drew friends around him, retaining the old and attracting new. He came to the social gathering with joyous face and kindly feelings. His love for natural scenery was genuine and hearty, and what-

ever personal enjoyment came from this source, it was always enhanced if others partook of it with him. There are too many naturalists who stand in the presence of nature all their days, but see her not. To them the world offers nothing but the forms they would technically describe and arrange in their cabinets. Take away this object and all becomes a waste, for they are neither warmed nor enlivened by the world around them. Not so with our associate; no one toiled more industriously than he over individual forms and specific descriptions; but all this aside, every aspect of nature touched him to the innermost. Those who have been intimate with him know how his face would light up while in the presence of the least as well as of the greatest natural objects! the flower of a day, or the sturdy tree that had known its centuries of life, the quiet or the grander scenes of the world. His emotions were not those of an enthusiast, but rather came of a clear perception and calm contemplation of the things around him, and of his own responsive nature.

His life, all too poorly and inadequately represented in this sketch, was throughout a consistent one, and to the end each day was full to the round. He was still endeavoring to improve what had been done before, and looking forward to the accomplishment of new and better ends, when suddenly it was closed. He had been less well than usual; on the afternoon of September 14th, 1866, he manifested the usual symptoms of an attack of Asiatic cholera, soon after fell into a state of collapse, and on the following morning just before the dawn, he died.

For the following chronological catalogue of Dr. Gould's communications, I am indebted to Mr. Samuel H. Scudder, Secretary of the Society.

Lamarck's Genera of Shells with a Catalogue of Species. Translated from the French. 16mo. Boston, 1833.

On the Cicindelæ of Massachusetts. Bost. Journ. of Nat. Hist., I. Art. iv, pp. 41–55, Plate 3.

Report on the Geology, Mineralogy, Botany and Zoölogy of Massachusetts, made and published by order of the government of that

State. 2d Edition, by Edward Hitchcock. 8vo. Amherst, 1835. Part IV. A Catalogue of the Animals and Plants in Massachusetts. vi., Crustacea, by A. A. G. pp. 548–50. Part IV. separately published. Crustacea, pp. 28–30.

First Report on the Geology of the State of Maine, by C. T. Jackson. 8vo. Augusta, 1837. List of shells found in Maine, by A. A. G. p. 119.

Reports of the Commissioners on the Zoölogical Survey of the State. Massachusetts House Documents, 1838, No. 72. Dr. Gould's Report (on molluscous and the other lower animals,) pp. 105–7.

Scientific Proceedings of the Boston Society of Natural History in the months of June, July and August, 1838; drawn up from the Records of the Society, by A. A. G., Recording Secretary. Amer. Journ. of Science and Arts. XXXVI; pp. 379–93, XXXVII; pp. 391–7.

Report on a paper by J. P. Couthony on Thracia Conradi, with Rev. F. W. P. Greenwood. Amer. Journ. of Science and Arts. XXXVI; pp. 379–80.

On the marine product commonly called Neptune's Goblet. Amer. Journ. of Science and Arts. XXXVI; p. 386.

Remarks on Rostellaria occidentalis. Amer. Journ. of Science and Arts. XXXVII; p. 396.

On Dephinula minor. Amer. Journ. of Science and Arts. XXXVIII; p. 193.

Descriptions of Shells. Amer. Journ. of Science and Arts. XXXVIII; pp. 196–7. Otia Conchologica, pp. 179–81.

Report on shells from California. Amer. Journ. of Science and Arts. XXXVIII; p. 396.

On Scutella bifissa. Amer. Journ. of Science and Arts. XXXIX; p. 183.

Monograph of the Species of Pupa found in the United States; with figures. Bost. Journ. of Nat. Hist., III, Art. xiii, pp. 395–404, Plate III; IV, Art. xviii, pp. 350–60, Plate XVI. Otia Conchologica, pp. 182–3.

Results of an Examination of the Shells of Massachusetts and their geographical distribution. Bost. Journ. of Nat. Hist., III, Art. xviii, pp. 483–94.

Report on the Invertebrata of Massachusetts, comprising the Mollusca, Crustacea, Annelida and Radiata. Published agreeably to an order of the Legislature, by the Commissioners on the Zoölogical and Botanical Survey of the State. 8vo. Cambridge, 1841. Otia Conchologica, pp. 181–2, 237. Annales des Sciences Naturelles, 2e Ser. T. XVI, p. 379. Amer. Journ. of Science and Arts. XLI; p. 378. Revue Zoologique, 1841. p. 282.

Results of investigations concerning the Testacea of Massachusetts. Proc. Bost. Soc. of Nat. Hist., I ; pp. 6, 7.

Notice of the origin, progress and present condition of the Boston Society of Natural History. Amer. Quart. Register, XIV ; pp. 236–41. Also published separately, pp. 1–8.

Characters of shells to be fully described in the next number of the Journal. Boston. Journ. of Nat. Hist., IV, third page of the cover of No. 1. Proc. Bost. Soc. of Nat. Hist., I ; pp. 137–8. Otia Conchologica, p. 183.

Review of Ellis's work on Corallines. Proc. Bost. Soc. of Nat. Hist., I ; p. 16.

Notice of Paludina ponderosa. Proc. Bost. Soc. of Nat. Hist., I ; p. 32.

Examination of a paper by Henry C. Lea, purporting to describe eight new species of shells. Proc. Bost. Soc. of Nat. Hist., I ; p. 61.

Remarks on the variations of a species of Neritina. Proc. Bost. Soc. of Nat. Hist., I ; p. 71.

On the powers of locomotion in Mytilus edulis. Proc. Bost. Soc. of Nat. Hist., I ; p. 72.

Notice of Sowerby's Thesaurus Conchyliorum, No. 1. Proc. Bost. Soc. of Nat. Hist., I ; p. 86.

Review of a pamphlet by Prof. C. B. Adams, on the Mollusca of Vermont. Proc. Bost. Soc. of Nat. Hist., I ; p. 89.

Description of Pasithoe umbonata. Proc. Bost. Soc. of Nat. Hist., I ; pp. 92–3.

Notice of some works recently published on the nomenclature of Zoölogy. Amer. Journ. of Science and Arts. XLV ; Art. i. pp. 1–12.

Remarks on Dr. Binney's critical notice of the species of the genus Pupa found in the United States. Proc. Bost. Soc. of Nat. Hist., I ; p. 106.

Notice of Mighel's Catalogue of the marine, fluviatile and terrestrial shells of the State of Maine and adjacent Ocean. Proc. Bost. Soc. of Nat. Hist., I ; pp. 117–8.

Notice of Haldeman's Monograph of the freshwater univalve Mollusca of the United States. Genus Physa. Proc. Bost. Soc. Nat. Hist., I ; pp. 132–3.

Review of characters of shells described on the cover of the Boston Journal of Natural History, Vol. IV., No. 1. Proc. Bost. Soc. Nat. Hist., I ; pp. 137–8. Otia Conchologica, p. 183.

Descriptions of two foreign species of Pupa. Proc. Bost. Soc. of Nat. Hist., I ; pp. 138–9. Otia Conchologica, p. 189.

Characterization of Shells appearing to be hitherto undescribed, received from the Rev. Francis Mason, missionary at Tavoy, British Burmah. Proc. Bost. Soc. of Nat. Hist., I ; pp. 139–41, 144. Otia

Conchologica, pp. 189–92. Mason's Burmah, pp. 371, 372, 374. Journ. Asiatic Soc. of Bengal, [n. s.,] No. 186, pp. 62–5.

Report on Papers of the Rev. R. T. Lowe, relating to the plants and land-shells of Madeira. Proc. Bost. Soc. Nat. Hist., I; pp. 148–9.

Remarks on some Shells received from Dr. Savage from Cape Palmas. Proc. Bost. Soc. Nat. Hist., I; p. 153.

Descriptions of Shells received from Drs. Savage and Perkins, from Africa. Proc. Bost. Soc. Nat. of Hist., I; pp. 157–9. Otia Conchologica, pp. 192–3.

Descriptions of two species of Anodon from the River Salwen in British Burmah, sent by Rev. F. Mason. Proc. Bost. Soc. of Nat. Hist., I; pp. 160–1. Otia Conchologica, pp. 193–4. Mason's Burmah, p. 375.

Descriptions of Land Shells from the Province of Tavoy in British Burmah. Bost. Journ. of Nat. Hist., IV; Art. xxxviii, pp. 452–9, Plate xxiv. Otia Conchologica, pp. 183–4, 189–92. Mason's Burmah, pp. 371–2, 374. Journ. Asiatic Soc. of Bengal, [n. s.,] No. 186. pp. 62–5.

Descriptions and notices of some of the Land Shells of Cuba. Bost. Journ. of Nat. Hist., IV; Art. xli, pp. 485–98. Plate xxiv.

On Helix lucida. Proc. Bost. Soc. of Nat. Hist., I; p. 174.

Descriptions of two species of Helix from the Sandwich Islands. Proc. Bost. Soc. of Nat. Hist., I; p. 174. Otia Conchologica, p. 194.

Notice of a paper by Mr. I. Lea, describing shells supposed to be new. Proc. Bost. Soc. of Nat. Hist., I; pp. 183–4.

Remarks on Mighel's descriptions of shells. Proc. Bost. Soc. of Nat. Hist., I; p. 189.

Descriptions of species of Land Shells from the Sandwich Islands. Proc. Bost. Soc. of Nat. Hist., II; pp. 26–8. Otia Conchologica, pp. 194–6.

Descriptions of Shells collected by Dr. Charles J. Bates, on the Coast of Liberia. Proc. Bost. Soc. of Nat. Hist., II; pp. 37–8. Otia Conchologica, pp. 196–7.

Descriptions of recent Shells collected by Mr. John Bartlett in the Everglades of Florida. Proc. Bost. Soc. of Nat. Hist., II; p. 53. Otia Conchologica, p. 197.

Descriptions of Shells from the Coast of Africa. Bost. Journ. of Nat. Hist., V; Art. xix, pp. 290–3, Plate xxiv. Otia Conchologica, pp. 196–7.

On Pholas costata and P. truncata. Proc. Bost. Soc. of Nat. Hist., II; pp. 81–2.

Remarks on certain characters in the shell distinctive of Lottia and Patella. Proc. Bost. Soc. of Nat. Hist., II; pp. 83–4.

Description of Shells from Tavoy. Proc. Bost. Soc. of Nat. Hist., II; pp. 98–100. Otia Conchologica, pp. 198–9. Mason's Burmah, pp. 367, 370, 373.

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OBITUARY NOTICE

OF

DR. HENRY BRYANT,

PREPARED BY A SPECIAL COMMITTEE, AND READ AT THE ANNUAL MEETING, IN MAY, 1867.

Dr. Henry Bryant was born in Boston, May 12th, 1820. He received his early education here at Mr. Thayer's school, and was prepared for college at Mr. Welles' school in Cambridge. He entered Harvard University in 1836 and graduated in 1840, and immediately commenced the study of medicine in the Tremont Medical School and the Medical School of the University, from the latter of which he received the degree of Doctor of Medicine in 1843. Soon afterwards he went to Europe to prosecute his professional studies still farther in Paris. Some time in the year 1845 he received the appointment of *Interne* in the Hospital Beaujon in Paris, an appointment specially honorable, as it is only obtainable as the result of a severe competitive examination. The close confinement and laborious duties of this office broke down his health, and he was in consequence obliged to resign his position a few months afterwards. Availing himself of an opportunity which was offered to him, through the kindness of some French army officers whose acquaintance he had made, and seeing in it a probable means of restoring his health, he joined the French army in Africa as a volunteer surgeon, and served in this capacity during a winter campaign in Algeria in 1846. It is probable that this experience, by fitting him for the responsible duties of an

army surgeon, had an important influence in leading him to offer his services in this capacity at an early date during the recent war in this country.

From Europe Dr. Bryant returned home in October, 1847, and commenced the practice of his profession in Boston, associating himself with Dr. Henry J. Bigelow as surgeon to a private dispensary for surgical cases. In carrying out the plan of this arrangement he again made a trip to Europe, where he remained for a few months. Shortly after his return home his health again failed him, under his assiduous application to his duties, and he was finally obliged to abandon the practice of his profession; this he was enabled the more readily to do, as his circumstances in life were such as not to compel him to rely upon his profession for support.

Dr. Bryant was married January 6th, 1848, to Elizabeth B. Sohier, daughter of William D. Sohier, Esq., of Boston.

After giving up the practice of his profession, Dr. Bryant devoted himself with more or less assiduity to the study of Ornithology, which had been a favorite pursuit with him from boyhood. It was at about this period that Dr. Bryant met with a severe accident, causing alarming symptoms at the time, and, as he thought himself, having much to do with the subsequent attacks of indisposition from which he suffered very frequently to the close of his life. In landing from his boat at Cohasset his foot slipped on some wet seaweed and he fell with great violence upon a rock, receiving a severe blow in the region of the stomach. He was taken up insensible, and was confined to his bed for several weeks, suffering very severely. The precarious state of his health compelled him to take a great deal of out door exercise; and his active, energetic temperament led him often to the most distant parts of this country in excursions for the purpose of collecting specimens of ornithology and other objects of natural history; and on which he was often exposed to great hardship and privation, but which only seemed to invigorate him. He had a singular power of endurance, and, invalid as he was, a most stoical indifference to considerations of personal comfort on these expeditions. Thus he passed his time, partly at his summer residence at Cohasset

in this State, partly at his house in Boston, at short intervals disappearing from sight for a few weeks or months, to return from the extreme north or south laden with the spoils of his campaign. Of late years he made quite frequent visits to the West India islands during the winter seasons, for the same purpose.

Subject to this necessity of prolonged excursions from home and an active life in the open air, the outbreak of the civil war in this country found him untrammelled by professional bonds, and prepared by a previous experience of army life to enter at once upon the arduous and responsible duties of an army surgeon. It was a time when the number of medical men thus qualified, in this country, was extremely small, and the demand for them was the most urgent. It was all the more honorable, therefore, to the subject of our notice, that, uninfluenced by any pecuniary necessity, and unstimulated by any professional ambition, with the leisure and opportunity of devoting his time in the pleasantest way to the delightful branch of natural history which he had made his special study, he yet felt it his duty to come forward early and offer his services to his country. Not content with the appointment which the necessity of the case or the influence of friends might easily have secured for him, he went to Washington and offered himself as a candidate for the office of assistant surgeon in the regular army. As might have been anticipated the severe ordeal of examination to which he was subjected was no obstacle to him, and he returned home with the commission for which he had offered himself. Without waiting for the position which this appointment might give him in the regular army, which was then dwindling into insignificance in point of numbers in comparison with the volunteer host which was mustering, he accepted the appointment of Surgeon to the 20th regiment of Massachusetts volunteers, and was commissioned in that capacity, July 1st, 1861. He was promoted to be Brigade Surgeon, September 10th, but remained with his regiment until after the disaster of Ball's Bluff in October, when he joined General Lander in the Shenandoah valley, and served on his staff until the death of that officer. He next

joined the command of General Shields in the same department, in the capacity of Medical Director. While engaged in this service he received a severe injury of the knee from his horse falling with him on icy ground. From this accident he suffered many months, part of the time being confined to his bed in extreme pain, and much of this period being unable to set his foot to the ground. His injury was so severe that the question of amputation was at one time entertained; yet during the whole of this term of service he continued on duty and did not ask for leave of absence until his convalescence was fully established. It was while suffering in this way that he organized the military hospitals in Winchester in addition to his other arduous duties. He accompanied General Shields' command to Fredericksburg in August, 1862, and in the same month was ordered to take charge of a small military hospital near Washington, known as Cliffburn hospital. Having thoroughly organized it, and put it in successful operation, he left it, by orders from Government, for Washington, December 23d, 1862, where he took charge, on the 30th, of the Lincoln Hospital, one of the first of the large army hospitals, at a time when the elaborate system under which so many were subsequently planned and put in operation by the Medical Department of the army was as yet in embryo. Upon him individually, therefore, rested the whole labor of planning and putting into execution the multitude of details involved in so responsible an experiment. That his efforts were crowned with the most complete success is the verdict of every medical man who had an opportunity of visiting his well-ordered establishment. In fact the Lincoln Hospital under his administration was regarded as a model hospital. But here, as on every occasion before, where he had been exposed to the exhaustion attendant upon close confinement and excessive mental labor, his strength and health failed him, and finally, completely broken down, he was compelled to throw up his commission and resign his place in the army in the month of May.

A characteristic extract from a letter to a friend, dated

May 1st, 1863, shows his determined spirit, and to what an extremity his indisposition had brought him. He writes:—

"I am as nearly dead as a man can be without stopping his breath. I have not touched a morsel of food for seventy-two hours; and for the week previous did not eat more than three ounces a day. I can not at times drink a mouthful of cold water without suffering excruciating pain. I am so weak that I can hardly stand, but I have to work all the time. If I don't get better shortly I shall leave and let everything go."

After the establishment of peace in this country, he visited Europe once more, accompanied by his family, whom he left there after a few months, returning to this country *en route* of another ornithological excursion to the warmer latitudes of North America. Again he crossed to Europe, and again returned to Boston towards the close of 1866. He sailed for Porto Rico, December 1st, and arrived there on the 9th, intending to proceed to St. Thomas, but which he was deterred from doing by the reports of the prevalence of cholera and yellow fever in that island. He remained, therefore, at Porto Rico, and on the 28th of January, 1867, after travelling in the island, he reached Utuado. On the 29th he shot for an hour or two in the afternoon in this mountainous region without fatigue and slept well. On the 30th he was taken sick with what he regarded as rheumatism, suffering excruciating pain in his back and limbs. According to the statement of his companion, his pain was such as to compel him to leave the house and walk the street to relieve his intolerable restlessness; a circumstance which indicates that his suffering must have been very great, as he had, on ordinary occasions, an uncommon power of endurance and self-control. A large dose of opium quieted him at last, and he passed a comfortable night. On the 1st of February, finding that his symptoms were no better, he determined to go to Araceibo, a distance of twenty-five miles, on horseback. His pain was excessive, but at ten o'clock he and his companion mounted their horses and rode until one. Although suffering intensely, with characteristic energy he dismounted at a bridge at one o'clock for the purpose of shooting some swallows which were flying over the river, and fired twice.

From that point to Araceibo, a distance of eight miles, he was compelled to walk most of the way, being unable to bear the motion of riding. The following night he slept well, having taken a glass of whiskey and water and a heavy dose of opium at bed time. He had proposed starting in a carriage for St. John, a distance of fifty miles, on the following morning. On being called by his companion at six and a half o'clock he inquired what time it was and said he felt better. He then asked to be called at seven, as he did not wish to rise then. At seven a druggist came in to learn how to skin a bird, Dr. Bryant having promised to teach him. At first he declined for want of time, but afterwards sent for a bird skin and explained the process. At ten minutes past seven he rose and dressed, came out of his chamber and took some coffee, but seemed stupid and heavy, and returned to his chamber, asking his companion to get his luggage ready. At half past seven the coach came, the trunks were put on, and he was called but did not answer. On going to his room he was found in a state of unconsciousness from which all attempts at arousing him were unavailable. His symptoms pointed to the brain as the seat of some grave disease, and he received the most assiduous attention of his physicians until he died, which event took place at a quarter past four, P. M.

This brief history of the life and death of our departed associate is all which the Committee have been enabled to prepare. The absence of all of his nearest relatives from the country deprives them of the opportunity of giving many details which they would have been glad to have presented. Enough has been said, however, to show that Dr. Bryant was a man of no common kind. To many of his acquaintances, however, he was, in some respects, an insoluble problem. He was regarded by most people as somewhat peculiar and eccentric, and the Committee feel it their duty, therefore, to dwell a little upon certain points in his character which were not generally well understood.

He was well known to a large number of persons, in the sense that certain traits and peculiarities of his were familiar to them. But these peculiarities, in the judgment of those

who knew him best, rather concealed than showed his real character. For instance, he was often very communicative, extremely free in his mode of address, even with strangers or persons entitled by age or station to superior respect; and probably seemed to most people exceedingly free and easy and demonstrative. At the same time, perhaps his strongest characteristic was reserve; a reserve so deep-seated and habitual that even the familiarity of years, and entire mutual confidence did not do much towards really removing it, even after it had ceased to be a concealment. His repugnance to speaking of matters which touched him closely, though there might be nothing in them that he wished in the least to conceal, was remarkable, and stood in strange contrast with the extreme irreverence and the off-hand way in which he handled any topics of only general interest. This reserve was not always passive merely or silent, but aggressive, and showed itself in banter and mystification, and in an assumed cynicism, which formed much of the surface he showed to the world. Beneath this, the real man was of an almost childlike simplicity and affectionateness, and of an integrity that revealed itself in naive astonishment when he found the disbelief in unselfish motives which he so often professed, really acted upon by another. The key to much that was puzzling in him is to be sought in the combination of quick and even overquick perception, and a lively, impatient disposition (lacking at the same time all heat of temper), with an utter want of that *social conscience*, that mastering sense of what is usual and what is expected, which makes better citizens sometimes of persons far more scantily provided by nature than he. The absence of it saved him no doubt from many snares that beset most men's paths, but he missed with it the useful effect of the old ruts of convention in utilizing energy and in supplying a ready-made guidance always at hand, and at any rate much better than none. Dr. Bryant said of himself that his great defect was too much quickness. What he needed was to run weighted and between fences. Wanting these external helps, driven by his vivacious temperament, impatient of inaction and still more impatient of routine, his energies found no suitable outlet in

steady work, but escaped in an irregular and fitful way, in self-appointed tasks, shrewdly planned and admirably executed, so far as they were executed at all, but undertaken, avoided, or dropped rather as whim or chance might dictate, than of any settled purpose.

Ill-health had, no doubt, much to do with this. But the waste of force was aggravated by something deeper than mere bodily disturbances. His insufficiently balanced energy made him hard to please with any attainable results of his own or others, not from censoriousness, for there was not a grain of malice or sourness in him, but with the necessary effect, often, to leave him to take up with something inferior merely as less inviting attack.

He dearly loved thoroughness, and insisted upon it in all that he did or directed, and in himself or in others could more easily tolerate omission than slack performance. His acute logical intellect took nothing for granted and received nothing upon hearsay or second-hand assurance. This love of exactness, however, was no love of quiddling, but he looked always to substantials, and readily seized the point of real importance. Hence it was, no doubt, that with all his tenacity of purpose he always gained and kept the respect and attachment of those with whom he had to do, for they felt that it had in it nothing of fussiness or self-importance, but came only from an uncompromising adherence to a really elevated standard. He was true as steel, through and through genuine, and with far more kindliness and far wider comprehensiveness and sympathy than he ever liked to show.

In his dealings with others, his intellectual honesty and clearness of sight, his horror of fallacies and conventionalities, together with his recklessness of appearances and of consequences made him impatient of any suspension of judgment, and needlessly intolerant of those *buffers* of sentiment which between most people ease off the shocks that human infirmities render inevitable. He must go straight to the end that happened at the moment to be before him, and the consequence was a certain want of poise and of breadth of view. Upon these obstructions he wasted too much of his

strength; and though he made his mark and lived not in vain, yet now only his friends can know what possibilities lay in him, and how superficial were the hindrances that prevented them from being fully realized. They alone can know the real elevation of purpose and the real humanity that were often hidden from the eyes of the world under an assumed air of carelessness or of cynicism.

Dr. Bryant was elected a member of the Society November, 1841, and appointed cabinet-keeper at the annual meeting in 1843, but resigned November 1st of the same year. In 1854 he was elected Curator of Ornithology, which office he filled until his death. In 1855 he also took charge of the Entomological collection for a time.

During his connection with the Society he read the following Communications and Papers, which were published by the Society.

1853. *February* 3. A paper on the non-identity of *Grus canadensis* and *Grus americana.*

1857. *January* 21. On the birds observed at Grand Manan and at Yarmouth, N. S, from June 16th to July 8th, 1856.

March 4. Communication on the supposed new species of Turkey from Mexico, described by Mr. Gould.

1859. *January* 19. On birds observed by him in East Florida, south of St. Augustine.

July 6. A list of birds seen at the Bahamas from January 20th to May 14th, 1859, with descriptions of new or little-known species.

1860. *January* 18. A Paper on *Turdus minimus* and *Vireo bogotensis*, from Bogota.

1861. *January* 16. Remarks on some of the birds that breed in the Gulf of St. Lawrence.

March 6. Remarks on the variations of plumage in *Buteo borealis* Auct., and *Buteo Harlani* Auct.

March 20. Monograph on the Genus *Catarractes* Moehring.

1863. *July* 1. Description of two birds from the Bahama Islands, hitherto undescribed; *Pitangus bahamensis* and *Saurothera bahamensis.*

December 16. Description of a new variety of *Parus* from Yarmouth, N. S.; also Remarks on the Genus *Galeoscoptes* Cabanis, with the characters of two new genera, and a description of *Turdus plumbeus* Linn.

1865. *January* 4. Remarks on the type of *Buteo insignatus;* also Remarks on *Sphyropicus varius* Linn.

1866. *January* 3. A list of birds from Porto Rico presented to the Smithsonian Institution by Messrs. Robert Swift and George Latimer, with descriptions of new species and varieties.

October 17. Addition to a list of birds seen at the Bahamas.

December 5. A list of the birds of St. Domingo with descriptions of some new species or varieties.

Dr. Bryant also published in the Comptes Rendus, XXVI, p. 276, 1848, a paper on the Corpus striatum in birds.

During the last ten years he made the following expeditions for scientific research and collections, viz.: To Grand Manan, Florida, Bahamas, Florida, Canada and Labrador, North Carolina, Cuba, Jamaica, Bahamas, Porto Rico.

His Donations to the Society are as follows:—

1859. A collection of reptiles, fishes, crustaceans and shells from the Bahamas.

1860. Miscellaneous collections from Labrador and Florida.

1861. A valuable collection of skins of mammals procured by him through the Smithsonian Institution.

1864. Three hundred mounted foreign birds from his own collection, and three hundred and forty-six specimens of mounted birds obtained by him from the Smithsonian Institution; the specimens from this Institution, in the last two donations, having been procured through pecuniary aid received from him.

1865. Twenty-five hundred specimens, chiefly shells and insects. Five hundred specimens of fossils from Lyme Regis.

1866. The magnificent Lafresnaye collection of birds, containing nearly nine thousand specimens, was purchased by him at Falaise, France, and presented to the Society. Of this addition to the Museum, Prof. Baird, in a letter to the Committee, writes as follows:—"I have little hesitation in saying that no other single cabinet in Europe, public or private, contains so many types of American species, and could I have chosen at will, I certainly would have selected that in your possession as the most desirable to have in America. This is due to the fact that Lafresnaye, during the many years in which he was occupied in forming his collection, was the principal authority for South American ornithology; and nearly all the principal gatherings from Bogota, Ecuador, Bolivia, etc., passed into his hands for description, and either by purchase or donation he retained for himself types of his species."

CONDITION AND DOINGS

OF THE

BOSTON SOCIETY OF NATURAL HISTORY,

AS EXHIBITED BY THE

ANNUAL REPORTS

OF THE

CUSTODIAN, TREASURER, LIBRARIAN AND CURATORS.

MAY, 1868.

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1868.

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REPORT OF THE CUSTODIAN

OF THE

BOSTON SOCIETY OF NATURAL HISTORY,

EMBODYING THE REPORTS OF THE LIBRARIAN AND CURATORS

OF THE SEVERAL DEPARTMENTS,

FOR 1867–68.

During the year now brought to a close, the work of construction, partially sketched in my last report, has been carried successfully forward, and to-night for the first time, we hold our anniversary in the lecture hall, which has proved for eight months so well adapted to its purpose. In addition, two exhibition rooms have been fitted up, new cases built in several departments, and galleries constructed for the cabinets which will soon be required; the working apartments have been doubled in number and increased in efficiency; a second library room has been furnished and occupied; a printing office added to the establishment; and, on sanitary grounds, the Janitor's apartment entirely remodeled.

The completion of the lecture room has enabled us to carry out a long cherished plan of giving public courses of popular lectures on natural history—an experiment which the Society in its younger days was one of the first to inaugurate; the Council has not yet fully perfected its plans

and two courses only have been given; the first, by Mr. E. S. Morse, Curator of Mollusks, upon the natural history of Shell Fish, a series of six lectures, at which about sixty persons were present; the second, by Mr. Horace Mann, Curator of Botany, upon the structure of Plants, a series of eight lectures, attended by about one hundred persons.

Twenty general meetings of the Society, seven of the Section of Microscopy, and nine of the Section of Entomology have been held during the year. The average attendance at the general meetings has been nearly forty, and at each of the Sections a little more than nine.

At these meetings, eighty-six communications — nearly double the number of the previous year—have been presented by thirty-nine individuals, viz., fifty-six communications by thirty-one individuals at the general meetings; four communications by two individuals at the meetings of the Section of Microscopy; and twenty-six communications by eight individuals at those of the Section of Entomology, under the following titles:—

A. Agassiz. On the position of the sandstone of the southern slope of a portion of Keweenaw Point, Lake Superior. *June*, 5, 1867.

Prof. L. Agassiz. Remarks upon the antiquity of man. *October* 16, 1867.

Remarks upon Dr. Wilder's paper, on the want of symmetry in leaves. *November* 6, 1867.

Comparison of the aurochs of Europe with the bison of America. *November* 6, 1867.

Remarks on the age of certain rocks in Scotland, formerly referred to the Old Red Sandstone. *November* 20, 1867.

Remarks upon the Rev. Mr. Perry's paper, on the Red Sandstone of Vermont. *December* 18, 1867.

Observations upon the classification of the Siluroid fishes. *December* 18, 1867.

T. T. Bouvé. Notice of new localities of minerals. *May* 1, 1867.

A. S. BICKMORE. Some notes of a short journey on the Island of Yesso, and remarks on the Ainos. *December* 4, 1867.

Sketch of a journey through the interior of China from Canton to Haukow. *February* 19, 1868.

On the Ainos, or hairy men, of Yesso, Saghalien and the Kurile Islands. *March* 4, 1868.

DR. T. M. BREWER. Defence of the house sparrow from the destructive habits attributed to it. *February* 5, 1868.

W. T. BRIGHAM. Remarks on the form of volcanic craters. *November* 20, 1867.

DR. E. P. COLBY. Notice of the capture of Coccinella similis Rand. *November* 27, 1867.

J. CURTIS. Notice of a stone image found in a cave near Knoxville, Tenn. *May* 15, 1867.

A. M. EDWARDS. Note on a point in the habits of Diatomaceæ and Desmidiaceæ. *January* 8, 1868.

PROF. GAMGEE. On the use of carbonic oxide gas for the preservation of meat in large quantities. *April* 1, 1868.

DR. JOHN GREEN. On binocular vision. *July* 3, 1867.

DR. H. HAGEN. The Odonat-fauna of the Island of Cuba. *September* 25, 1867.

Remarks on a species of Chelifer found attached to the legs of a fly. *November* 27, 1867.

Lachlania abnormis, a new genus and species of Ephemerina from Cuba. *January* 22, 1868.

Remarks on some American species of Psocus. *January* 22, 1868.

Description of an apterous Termes from Japan. *February* 26, 1868.

Extracts from newspapers and private letters concerning a meteor seen in Prussia. *March* 18, 1868.

Notice of an orthopterous insect which deposits its eggs in the stems of the cotton plant. *March* 25, 1868.

On the Pseudoscorpions of America. *March* 25, 1868.

E. D. HARRIS. Remarks upon the character and habits of various breeds of domesticated pigeons. *January* 3, 1868.

J. L. HAYES. The Angora goat; its origin, culture and products. *March* 18, 1868.

W. HOXIE. Notice of a peculiar habit of blue jays. *June* 19, 1867.

DR. C. T. JACKSON. Analysis of fossil guano from the neighborhood of Charleston, S. C. *February* 19, 1868.

Recent methods for the preservation and coloration of wood. *April* 15, 1868.

DR. B. JOY JEFFRIES. On the deceptive appearance which lines present when they meet at certain angles. *March* 18, 1868.

DR. S. KNEELAND. On the relation of the plumage of birds to their modes of nidification. *November* 20, 1867.

DR. G. LINCECUM. Notice of the destructive grasshoppers of Texas. *March* 25, 1868.

T. LYMAN. Remarks on the artificial reproduction of the shad. *January* 3, 1868.

On methods used in hatching the spawn of the shad. *February* 19, 1868.

H. MANN. Remarks on the fruit of Cyclanthera explodens. *September* 18, 1867.

J. C. MERRILL, JR. Notice of the occurrence of Pieris rapæ in Vermont. *September* 25, 1867.

E. S. MORSE. Remarks on the principle of cephalization applied to the classification of Mollusca. *September* 18, 1867.

Remarks on the shell-heaps of Casco Bay. *September* 18, 1867.

Remarks on the probable age of the shell-heaps of Casco Bay. *October* 2, 1867.

On the mode of growth of a new entomostracous Crustacean. *March* 4, 1868.

W. H. NILES. Remarks on the principle of cephalization applied to the classification of Echinoderms. *September* 18, 1867.

DR. A. S. PACKARD, JR. On the development of a species of Diplax. *January* 22, 1868.

Remarks on insects which live, during their earlier stages, in brine or salt water. *January* 22, 1868.

On the structure of the ovipositor and of the parts in the male insect homologous to it. *February* 26, 1868.

REV. J. B. PERRY. Queries on the Red Sandstone of Vermont, and its relations to other rocks. *December* 18, 1867.

E. N. RIOTTE. Description of a new mineral, stetefeldtite. *May* 1, 1867.

F. G. SANBORN. Remarks on some interesting insects. *November* 27, 1867.

S. H. SCUDDER. Additional notes on the Odonata of the Isle of Pines and the White Mountains of New Hampshire. *September* 25, 1867.

Notes on the stridulation of some New England Orthoptera. *October* 23, 1867.

Remarks on the stridulation of Orthoptera. *November* 6, 1867.

Notice of a curious specimen of Diapheromera. *November* 27, 1867.

Remarks on Dr. Packard's paper, concerning the development of Diplax. *January* 22, 1868.

Considerations drawn from the study of Mole-crickets. *January* 22, 1868.

Supplement to a list of the butterflies of New England. *January* 22, 1868.

On the rank of the families of Orthoptera. *February* 5, 1868.

Notice of some new butterflies from Iowa. *February* 26, 1868.

Remarks on two new fossil insects from the carboniferous formation in America. *February* 26, 1868.

On an orthopterous insect which deposits its eggs in the stem of the cotton plant. *March* 25, 1868.

Description of a new species of butterfly, Thecla Juanita. *March* 25, 1868.

C. STODDER. Description of Navicula carassius Ehr. *October* 9, 1867.

Remarks upon the resolution of Nobert's test lines. *December* 11, 1867.

On soundings made off the coast of Maine, near Mt. Desert Island. *April* 8, 1868.

DR. D. H. STORER. Notice of his history of the fishes of Massachusetts. *November* 6, 1867.

DR. E. L. STURTEVANT. Note on the occurrence of Pinus strobi in a peat bog in Framingham, Mass. *February* 19, 1868.

L. TROUVELOT. On some parasites of the common rabbit. *March* 25, 1868.

P. R. UHLER. Some remarks upon the Odonata of Hayti. *September* 25, 1867.

G. L. VOSE. On the distortion of pebbles in conglomerates; with illustrations from Rangely Lake, in Maine. *January* 3, 1868.

REV. R. C. WATERSTON. On the changes undergone by feathers in a pillow-case long in use. *June* 5, 1867.
Tribute to Mr. Thomas Bulfinch. *June* 19, 1867.

W. WICKERSHAM. On the travelling of rocks. *July* 3, 1867.

DR. B. G. WILDER. Description of a new method of collecting and arranging information. *May* 15, 1868.
Remarks on the so-called gorilla and "what is it" in Barnum's Museum. *October* 16, 1867.
Remarks upon the want of perfect symmetry in the leaves of elms and hop-hornbeams. *November* 6, 1867.

Dr. J. WYMAN. Notice of a shell-heap in Salisbury, Mass. *May* 15, 1867.
On symmetry and homology in limbs. *June* 5, 1867.
Notice of the propensity of female spiders to destroy their mates. *September* 18, 1867.
Description of the shell-heaps of Mt. Desert. *September* 18, 1867.
Remarks on a collection of flint implements from Norway and the Island of Rügen. *October* 2, 1867.
On the former occurrence of the great auk in Maine. *October* 16, 1867.
Notice of a visit to the Dighton Rock. *October* 16, 1867.
On the position of the foramen magnum in the different races of men. *November* 20, 1867.

Résumé of observations on the shell-heaps of New England. *December* 4, 1867.
On the after-impression of objects. *March* 18, 1868.
Observations upon crania. *April* 15, 1868.

We have elected during the past year one Honorary Member, two Corresponding and forty Resident Members. Of the latter, thirteen have not yet ratified their election by complying with the requirements of the Constitution; two of the thirteen have paid their entrance fee but have not yet signed the Constitution; while eleven have neither signed the Constitution nor paid the initiation. By a recent change in the By-Law regulating admission to the Society, persons elected to resident membership are required to comply with specified conditions within six months or forfeit the opportunity of fellowship; and, by a vote of the Council, those who were elected previous to 1867 and neglected to respond within a definite time to a recent, special request to ratify their election to membership, were dropped from the list. Lists of members will hereafter be printed annually and the confusion and mistakes of former years avoided.

There has been no essential change in the subscription list of our Publications; a few names have been withdrawn and a few more added.

Early in the year we issued the second part of our Memoirs, containing papers by Dr. Coues, on the Osteology and Myology of the Colymbus torquatus; by Mr. Scudder, on two fossil insects from the carboniferous formation of Illinois, with a discussion of the importance, for classification, of characters drawn from the neuration of the wing; by Mr. Hyatt, on the occurence of features characteristic of old age among Cephalopods, at the period of the decadence of that group; and by Dr. Packard, on the glacial phenomena he had observed in Labrador and Maine, together with a review of the recent invertebrates of Labrador. Within a few weeks, the third

part of the Memoirs has been published and the printing of the fourth and concluding part commenced. The third part contains two papers; one by Prof. Clark, giving the description and history of many species of sponges, for the purpose of proving their animality; the other, by Mr. Brigham, embracing both his own and all previous observations upon the volcanoes and volcanic phenomena of the Hawaiian Islands.

We have completed the eleventh volume of the Proceedings, issued the Annual Report for 1867, and published a small edition of the supplement to Prof. Hentz's Araneides of the United States, extracted from the eleventh volume of the Proceedings. A new edition of six signatures of the eighth volume of the Proceedings has been printed and copies of the complete volume can now be had. In the twelfth volume some improvements in typography will be introduced. About sixty pages of the Entomological Correspondence of the late Dr. T. W. Harris (mentioned in the last Report) are in type; the book will be issued during the coming summer or autumn as the first of a series of independent works, to be entitled Occasional Papers of the Boston Society of Natural History. The first Annual of the Society, containing its Charter and Constitution, a sketch of its history, catalogues of the officers and members with their addresses and other similar lists, may be expected in a few days. It will be published every May, and furnished gratuitously to any member who will keep the Secretary informed of his correct address.

The establishment of a printing office within the Museum has enabled us not only to print an unusual amount apart from our regular issues, but the Proceedings themselves have advanced so rapidly that we have ready for delivery all the printed Records of the Society up to this evening's report. A comparison of the dates of the meetings for the past ten years, with those of the signatures of the Proceedings in which the records occur, will show that on an average, six or eight months have elapsed between the

reading and the publication of a paper; we now propose to maintain the position we have gained and print every article with the utmost promptness.

By exchanges with correspondents we have sent away 270 parts of the Memoirs, 110 parts of the old Journal (half of which were imperfect), 66 complete volumes of the Proceedings, unbound sheets which would more than double the amount, and 41 copies of the annual Reports. The Smithsonian Institution, by its transmission of these publications to all parts of the world, free of expense, has laid us under renewed obligations.

In response to our requests we have received from the following Societies many early volumes of their Transactions:

Société des Sciences Naturelles	Neuchâtel.
Journal de Conchyliologie	Paris.
Entomological Society	London.
Senckenbergische naturforschende Gesellschaft	Frankfurt a. M.
Naturhistorisch-medizinischer Verein	Heidelberg.
Imper. Russkoe Geographitsheskoe Obshtshestvo	St. Petersburg.
Obshtshestvo Seljskago Khozjaistva Joujnoi Rossii	Odessa.
Naturhistorische Gesellschaft	Nürnberg.
Zeeuwsch Genootschap der Wetenschappen	Middelburg.
Académie Impériale des Sciences, Arts et Belles-Lettres.	Dijon.
Société des Sciences Physiques et Naturelles	Bordeaux.
Académie Royale des Sciences, des Lettres et des Beaux-Arts de Belgique	Bruxelles.
Naturforschende Gesellschaft	Bern.
Naturhistorischer Verein	Augsburg.
Deutsche geologische Gesellschaft	Berlin.
Royal Society	Edinburgh.
Hollandsche Maatschappij der Wetenschappen	Haarlem.
Naturforschende Gesellschaft des Osterlandes	Altenburg.
Liverpool Geological Society	Liverpool.
Glasgow Philosophical Society	Glasgow.
Société Royale de Botanique de Belgique	Bruxelles.

We must especially thank the Academy of Dijon, the Geological Society of Berlin, the Royal Society of Edinburgh, the Society of Sciences at Haarlem and the Natural History Society of Altenburg, which have favored us with

very extensive series of their publications, long needed in our library.

We have now upon our lists the names of three hundred and fourteen corresponding institutions, fifteen of which have been added during the year, viz:—

State Agricultural Society	Albany.
Société d'Émulation du Doubs	Besançon.
Werner-Verein zur geologischen Durchforschung von Mähren und Schlesien	Brünn.
Société Malacologique de Belgique	Bruxelles.
Journal of Anatomy and Physiology	Cambridge, Eng.
Association Zoologique du Léman	Genève.
Verein für siebenbürgische Landeskunde . . .	Hermannstadt.
Société d'Agriculture, Sciences, Arts et Commerce du Puy	Le Puy.
Journal of Travel and Natural History	London.
American Athenæum	New York.
Revue de l'Horticulture	Paris.
Landes-ober-Realschule und Real-Gymnasium . .	St. Pölten.
Neues Jahrbuch für Mineralogie, Geologie und Palaeontologie	Stuttgart.
Société d'Agriculture, Sciences, Arts et Belles-Lettres du Département d'Indre-et-Loire	Tours.
Scientific Association of Trinidad	Trinidad.

One topic, connected with the general interests of the Society, demands our attention. During the life of our late honored Vice President, Dr. A. A. Gould, the Legislature of Massachusetts authorized the republication of his valuable work on the Invertebrates of Massachusetts, with additional text and illustrations; a small edition of twelve hundred copies was provided for, at an expense of $4000; two hundred copies of the work were to be placed in the hands of the author, and about four hundred distributed among the members of the legislature and officers of the Commonwealth; the disposition of the residue was left to a future legislature. Dr. Gould, as you all know, died before the completion of the work, and the Governor very appropriately commissioned Mr. W. G. Binney to finish the task. Owing to the loss of the original copperplates and the ad-

vanced price of labor and material, Mr. Binney was obliged to ask for a double appropriation; the request has just been granted, and, at the same time, a further distribution of the edition determined on, by which each member of the present legislature and every public library in the Commonwealth will be provided with a copy, and the remainder—not fifty copies at the most—placed for distribution in the hands of the Trustees of the State Library. Anxious that a work so important, and so creditable to the State should be widely circulated among scientific institutions, the Council of the Society petitioned for an extension of the edition and a supply of five hundred copies to be sent abroad through its agency. The request was acknowledged to be reasonable and more important to the State than to the Society, but was denied upon the ground of its expense (about $1500). The meagre edition provided for, will thus be almost exclusively distributed among those who will value it little for its scientific merits; and, since neither the text is to be stereotyped nor the plates preserved, it is improbable that another edition will ever be printed. It will be known in Europe, only by a few copies in the large libraries, and before many years we shall hear unjust complaints of the negligence of European authors to give due credit to American writers.

The following table gives a summary of the additions to the Library by volumes, parts of volumes, pamphlets and maps or charts.

	Octavo.			Quarto.			Folio.			Maps and Ch'ts	To'l
	vls	pts	ph	vls	pts	ph	vls	pts	ph		
Books presented by individuals . .	57	8	101	33	3	13	19	1		8	243
" " " Publishing Com.		14	4		1	2					21
" purchased	17	14	205	5	24	6	2	21	1		295
" deposited in Binney library .	27		3	3			2				35
" " by the Republican Institution	20										20
" received in exchange . . .	241	476	72	61	158	17		56		2	1088
Total .	362	512	385	102	186	38	23	78	1	10	1697

As an additional room has been fitted up for the library, much of the time needed for the completion of unfinished work, mentioned in former reports, has been used in arranging and numbering the books in the new apartment and rearranging those in the front library. Temporary assistance has, however, been granted during the past few months, and some progress effected. The alcove catalogue of the front library is nearly completed, the pamphlets have been newly classified and their cataloguing commenced. A few months ago the Council appropriated several hundred dollars towards binding serial works, and we are pleased to announce that it has recently authorized the employment of a binder in the building; in a short time the appearance of the library will be greatly improved, few books having been bound during the past five years.

The gallery of the front library is now devoted to the transactions of societies and the Lloyd library of the Republican Institution. The floor is occupied by works on general anatomy and natural history, vertebrates, botany, local faunæ and floræ, geology, mineralogy, travels and voyages. The rear library contains the Bailey library of microscopy, works on insects, mollusks and radiates, scientific journals, encyclopædias, bibliographical works, and other volumes on miscellaneous topics. We have also provided a cabinet of portfolios and sliding shelves for the imperial folios, cases for the books recently received and additional closets for the publications.

Four hundred and sixty-four books have been borrowed from the Library by seventy-five persons.

The additions to the Museum are estimated at 115,000 specimens received in one hundred and thirty-nine lots; the most important are the following; the North American birds' eggs and the series of humming birds and nests, selected in Europe by the late Dr. Henry Bryant, and presented by Mrs. Bryant; the collection of rock specimens, minerals and fossils,

received from Dr. C. T. Jackson, and the Guatemalan animals purchased of Dr. Van Patten.

Under the joint auspices of the Smithsonian Institution and this Society, Col. Grayson has successfully explored the natural history, and especially the ornithology, of the island of Socorro, one of the Revillagigedos, situated off the west coast of America, in latitude 19° N. The birds obtained, although not very numerous, prove of peculiar interest; they are nearly all new to science, and distinct from the species, either of the neighboring continent, or of the Tres Marias, islands still nearer the coast. The manuscript notes of Col. Grayson, together with the animals obtained, are in the hands of Professor Baird, who will furnish a memoir upon them, for our publications.

Besides the work of construction already referred to, we have opened in the Museum a geological room, together with the botanical room in its rear, which had been closed during the preparation of the former. Storage, packing and spirit rooms have been fitted up in the basement, and the elevator rendered more serviceable by its removal to the opposite side of the building. About a year ago, the Council secured temporary aid for the arrangement of the Mollusks, and in the month of January, engaged Mr. F. G. Sanborn as permanent assistant. In addition, a new system of labelling the collections has been lately introduced, which will add much to their unity, attractive appearance and ready usefulness, and the cases have been numbered, as a preliminary step to the preparation of a Visitor's Guide Book.

The number of visitors to the museum has probably increased, but the demand upon the Janitor's time during the work of construction has rendered his enumeration very imperfect; by count there have been 34,625 visitors during the year. The museum has been open to the public one hundred and five days; on Thursdays, to ticket holders, fifty-three days; the average attendance on public days has

been three hundred and nineteen; the greatest number of visitors, during any one day, eight hundred and forty, on the second of November. The facilities of approach to the museum offered by the new line of horse cars, will doubtless augment these numbers in the future.

The additions to the department of Mammals and Comparative Anatomy during the year, are as follows: skeletons, 1; parts of skeletons, 1; skulls, 6; skins of mammals, 9; mammals in spirits, 4; miscellaneous, 2; total 23. The most important of these is a collection of skulls from Arizona, given by Dr. J. W. Merriam, and a fresh skin of a male caribou, two years old, received from Messrs. J. H. and C. D. Presho. About two hundred unmounted skins have been carefully examined, poisoned and packed away in glazed cases, where they will remain in safety until they can be mounted. The horns of ruminants, which were taken down during the construction of a gallery in the room devoted to skeletons and skulls, have been replaced in position, and newly labelled. Other additions have been made to this department by purchase, and through the favor of Drs. G. H. Brown, J. B. S. Jackson, W. M. Ogden, Messrs. W. T. Brigham, J. W. Clarke, W. W. Goodhue, J. R. Johnson, J. C. Little, Jr., S. J. Mixter, J. Norton, F. G. Sanborn, C. A. Stearns and the Smithsonian Institution.

Two cases have been added to the Bird cabinets by closing up windows on the southwesterly side of the square rooms, and new skylights constructed, which throw a much better light upon the specimens; by the removal of the reptiles from the main hall, the whole of the first gallery has been devoted to birds, thus partially relieving the crowded condition of certain cases, and enabling the Curator to make some progress toward a special collection of Massachusetts birds; specimens of the latter are solicited, either in the

fresh state or in skins. The following list of desiderata has been furnished by the Curator:—

Sparrow Hawk.
Marsh "
Hairy Woodpecker.
Yellow-bellied "
Ruby-throated Humming-bird.
Whippoorwill.
Night Hawk.
King-bird.
Least Flycatcher.
Acadian "
Traill's "
Wood Thrush.
Blue-Bird.
Ruby-crowned Wren.
Golden-crested "
Mourning Warbler.
Connecticut "
Worm-eating "
Nashville "
Black-throated Green Warbler.
" " Blue "
Blackburnian "
Prairie "
Scarlet Tanager. (♀)
Bank Swallow.
Great Northern Shrike or Butcher-Bird.
Warbling Vireo.
Solitary Vireo.
Cat-Bird.
Brown Thrush or Thrasher.
Common Wren.
Brown Creeper.
Chickadee.
Goldfinch. (♀)
American Crossbill. (♀)
White-winged " (♀)
Bay-winged Finch.
Yellow-winged Sparrow.
Blue Snow-Bird.
Chipping Sparrow.
Fox-coloured "
Black-throated Bunting.
Baltimore Oriole. (♂)
Crow.
American Bittern.
Night Heron.
Willet.
Dusky Duck.
Pintail.
King Eider.
Common Tern.
Arctic "
Roseate "
Least "
Red-throated Loon.

Most valuable additions have been made to this department during the year. Besides the rich and varied series of humming birds, embracing over seven hundred specimens, and perhaps three hundred species—the gift of Mrs. Bryant—a collection of more than two thousand Guatamalan birds was purchased from Dr. Van Patten. For other additions we are indebted to Mrs. H. F. Chase, Messrs. G. A. Boardman, J. E. Cabot, C. Cowing, E. C. Derby, J. Ennis, C. Q. Hill, P.

R. Hunt, F. Perrin, J. Ritchie, S. H. Sylvester and the Smithsonian Institution.

The department of the Nests and Eggs of Birds has been enriched by the collection of eggs presented by Mrs. Bryant, numbering 1500 specimens of more than 350 species; the greater part are from North America, and were chosen by Dr. Bryant himself, as a first selection from the duplicates of the Smithsonian Institution. A suite of nests, 75 in number, accompanied the collection of humming birds, already mentioned as the gift of Mrs. Bryant. A number of nests and eggs of American birds have been received from the Smithsonian Institution, and a few other donations from Rev. J. M. Hubbard and Messrs. W. T. Brigham and D. F. Carlton.

The law permitting scientific museums to obtain alcohol free of excise, enabled us to purchase a large quantity at a low price;[1] as a sufficient number of glass jars has also been procured, the restrictions formerly resting on the Curators of reptiles and fishes, are now wholly removed; a room has been furnished for their special use, and the public will soon be invited to witness the progress which has been made in these departments.

The dry specimens of Reptiles have been carefully poisoned and prepared for exhibition, and the wet specimens examined, separated and placed in a safe condition. The collection will soon be transferred to new cases, where the American and foreign specimens are to be arranged separately by orders. The Curator reports eight hundred specimens in this department, to three hundred and thirty-three of which localities are attached. About fifty of these localized specimens are dry; of the alcoholic specimens, 155 are North American and 128 exotic; the former comprise 29 Ichthyodi or tailed batrachians, 20 Anura or tailless batrach-

[1] Unfortunately the law has been recently rescinded, and much of what we had obtained is already consumed.

ians, 65 Ophidians or serpents, 34 Saurians or lizards, and 7 Chelonians or turtles; the foreign specimens number 6 Ichthyodi, 15 Anura, 61 Ophidians, 43 Saurians, and 3 Chelonians, — most of the localized specimens representing as many different species. Where the locality of specimens is unknown (and this unfortunately includes more than half of the collection, although many of them are duplicates), the specimens are divided as follows: 51 Ichthyodi, 68 Anura, 285 Ophidians, 164 Saurians, and 10 Chelonians. These can only be used for anatomical purposes, or as illustrations of the different groups; in view of their great number, the Curator wishes to remind donors of the comparatively slight value of a specimen where the locality is unknown, and to express his regret that some of the donations of the past year have been deficient in this respect. Sixty-one specimens have been added to the department, the most valuable being a small collection of foreign species from Mr. W. T. Brigham, and a few reptiles from the Guatemalan collection purchased of Dr. Van Patten; for the rest we are indebted to Mrs. D. D. Hughes, Drs. G. H. Brown, and E. P. Colby, and Messrs. W. T. Brigham, R. C. Greenleaf, A. Reynolds and F. G. Sanborn.

As the Fishes have been stored for a long time, many of them in kegs and cans, they will require much preparation before they can be exhibited; yet the Curator hopes to open the room to the public within a few weeks, and to complete the arrangement of the collection during the present season. The most interesting additions to the department have been obtained by purchase; they comprise a series of specimens of small fish, collected by Mr. J. A. Allen, from small streams on either side of the "great divide" in central Iowa, separating the waters of the Mississippi and Missouri, and a few Guatemalan fish purchased of Dr. Van Patten. Drs. G. H. Brown, and J. Homans, Capt. N. E. Atwood, and

Messrs. E. Bicknell, N. H. Bishop, W. T. Brigham and P. R. Hunt, have made small donations during the year.

The meetings of the Section of Entomology have been remarkably sustained, often proving as full of interest as the general meetings of the Society; almost every month several papers have been read. By the construction of a working-room, the insect cabinets, formerly scattered through various parts of the building, have been brought together; during their storage in inaccessible places, some injury resulted from the ravages of Anthreni, and, although these pests have been carefully eradicated, only constant vigilance, which the centralization of the collection will now permit, can ensure its safety. Over forty trays have been arranged and placed on exhibition. The collection of Guatemalan insects, purchased of Dr. Van Patten, is very rich in duplicates, and enables us not only to effect exchanges with museums and individuals, but affords an opportunity, seldom enjoyed, of studying the variation of tropical species. With the assistance proffered by Mr. P. S. Sprague, about one thousand Coleoptera have been selected from this collection, set and arranged, while Mr. Sanborn has spread and displayed half as many Guatemalan Lepidoptera. The following persons have presented specimens to the department: Miss Lucy Brewer, Rev. I. F. Holton, Drs. G. H. Brown, S. Kneeland, I. T. Talbot, and C. E. Ware, Capt. Lewis, Messrs. E. N. Abbott, F. W. Brewer, W. S. Brewer, W. T. Brigham, J. W. Brooks, E. Burgess, E. C. Cabot, R. C. Greenleaf, C. Q. Hill, S. Hubbard, D. M. King, A. A. Kingman, T. Lyman, J. C. Merrill, Jr., A. Reynolds, S. H. Scudder and L. Wetherell.

The Lower Articulates remain in the condition reported a year ago; a few purchases have been made, and donations received from Drs. G. H. Brown, and J. B. S. Jackson, and Messrs. N. H. Bishop and W. T. Brigham.

At the time of the last annual meeting the Curator of Mollusks was engaged to devote three consecutive months to the arrangement of that collection; but mechanics were at work so long in the exhibition room and laboratory devoted to the department, that he could only commence his task a month after the expiration of the specified time; other engagements made it impossible for him to renew the agreement, but every day that could be spared since then has been given up to the collection. The labor has necessarily been of a preliminary character; boxes have been unpacked, complete suites separated from the Bartlett Florida collection, the old collections rearranged in the new room, and many of the specimens removed to new trays. Much time has been given to the Pratt collection, and the Massachusetts shells which it contains are all disposed in window cases, permanently mounted on fresh tablets with new labels; the arrangement of the collection will proceed as fast as possible, and a portion of the new room soon be open to the public. We are indebted to Mrs. Henry Bryant for a valuable collection of mollusks, mostly terrestrial, from the Bahamas and other parts of the West Indies, collected by Dr. Bryant. They have been placed for examination in the hands of Mr. Thomas Bland, of New York, who has made the land shells of the West Indies his special study. We have recently purchased an interesting collection of Hawaiian shells labelled by Mr. W. Harper Pease, and donations have been received from Mrs. Winslow, Drs. F. H. Brown, J. Homans and B. J. Jeffries and Messrs. W. T. Brigham, J. H. Huntington, C. A. Stearns and R. C. Stone.

The collection of Radiates is now in a satisfactory condition, so far as its safety and value for scientific study are concerned; the catalogue is nearly completed, the alcoholic collections have been placed in new jars, and many labels written. Much time must be expended in mounting the corals in their natural upright condition, and in making the

collection generally interesting to the public. The additions have been few; we have received in exchange from the Museum of Yale College a selection of forty-eight corals and Echinoderms of twenty-one species, nearly all new to the collection, and in great part types of species from Panama and Peru, recently described by the Curator. Capt. Daniel H. Hutchinson has presented us with an exquisite specimen of sponge, the Euplectella speciosa or Venus flower basket, from the Island of Zebu, Philipines, and a few specimens have been received from Drs. G. H. Brown and J. B. S. Jackson, Capt. N. E. Atwood and Mr. F. A. Andrews.

A new room has been assigned to the department of Microscopy, and the rough material of the Bailey collection transferred to it. According to the provision of Professor Bailey's will, the mounted material, letters, and manuscripts have been placed, with the books, in a case constructed for that purpose in the rear Library. Instruments from the Boston optical works, and mounted specimens from the Essex Institute microscopical works have been exhibited at almost every meeting of the Section, and have added greatly to the general interest. Mr. C. P. Dillaway has presented specimens of soundings from Maine and Louisiana.

An additional cabinet has been constructed for the Herbarium, the herbarium itself partially rearranged and a new disposition made of the larger objects on exhibition. The Curator has devoted much time and labor to the extensive collection of Algæ bequeathed by Professor Bailey, and hopes to complete his work in a few weeks. A large collection of full-size paintings of Brazilian fruits, deposited in the botanical room by the artist, Mr. W. Ingalls, has attracted much attention. Donations have been received from Miss Lydia B. Felt, Drs. S. A. Bemis, S. Green, J. B. S. Jackson, B. J. Jeffries, S. Kneeland, E. L. Sturtevant and C. E. Ware and Messrs. L. Baker, H. D. Barnes, W. T.

Brigham, C. C. Frost, L. Hills, F. G. Sanborn, S. H. Scudder and C. A. Stearns.

The Curator of Palæontology reports that his department is in much the same condition as at the last annual meeting; previous to April, other duties prevented him from working upon the collections, but the first step toward a rearrangement has been made and the old plaster trays and colored labels will soon give place to new tablets and etiquettes. It is hoped that another year will see changes throughout nearly all of the collection. The most interesting addition has been the recent gift, by Mr. C. H. Dalton, of a suite of specimens from the lacustrine dwellings of Switzerland, illustrative of the food, implements, and dress of the prehistoric inhabitants; the most extensive donation was that of Dr. C. T. Jackson, consisting of several hundred fossils from various localities. The names of other donors are the Hon. David Sears, Dr. F. Müller, and Messrs. G. Barry, J. H. Huntington, A. A. Kingman and C. A. Stearns.

The Geological department has greatly progressed. As we promised in the last report, the collection was thrown open to the public soon after the annual meeting, and received its fair share of attention from visitors. It is already quite rich in volcanic products, and has been increased by a valuable donation of many thousand specimens, from Dr. C. T. Jackson; the unpacking and cleaning of this large accession, and the task of separating the fossils and minerals from the rocks, has occupied much time; the labelling will demand much more, but the Curator hopes the result will soon be seen on the shelves. A number of relief-maps of volcanic craters have been procured, and the Council has authorized the purchase of several hundred specimens of rocks, named by Dr. Krantz, of Bonn. The department has received donations from the Hons. Albert Fearing and David Sears, Drs. B. J. Jeffries and S. Kneeland and Messrs. H. P. Bowditch, J. C. J. Brown, J. W. Clarke, R. C. Greenleaf, J. H. Hunt-

ington, C. K. Landis, C. A. Stearns, G. L. Vose and D. Wellington and the Smithsonian Institution.

The Mineralogical collection is in good condition, but many changes of arrangement will doubtless be required on the publication of the new edition of Dana's Mineralogy. New floor cases have been provided for the metallurgic and economic department, in place of the old table cases so ill-suited to the exhibition of specimens, and the rearrangement of this division has progressed so rapidly that its completion is anticipated within a few weeks. The change will add greatly to the instructive character of the collection as a whole, and render it much more interesting to visitors generally. About 2,500 minerals are now on exhibition. Donations have been received from Miss L. Blaikie, Drs. F. H. Brown, C. T. Jackson, J. B. S. Jackson and J. W. Merriam and Messrs. B. W. Baldwin, D. F. Carleton, J. W. Clarke, G. C. Lane, W. H. Logan, J. J. May, O. S. Presbrey, C. J. Sprague and C. A. Stearns.

In closing, I wish to call your attention to a point of great importance, connected with the administration of the museum. The Annual of the Society, which will be placed in your hands in a few days, contains a short sketch of the history of the Society, showing from what slight beginnings the present Institution has arisen. The small collections, received at first, had a certain charm of novelty which attracted the lovers of nature, and were undoubtedly a principal means of sustaining the interest of its members; but the times have greatly changed; for, while the number of members who give their personal attention to the care of the collections is scarcely greater than in former years, the collections have increased an hundred fold, and the ratio of increase does not seem to lessen. Now it is manifestly impossible for such a state of things to continue, if the museum is to maintain an appearance creditable to the name and honor of the Society. On this account, several years ago,

a regular Custodian was appointed; for the same reason, the Council found it necessary, within a few months, to engage the services of a permanent assistant, whose labors have already been felt in nearly every department. On similar grounds, I believe that, in a short time, the services of many assistants will be indispensable; indeed, I am convinced that at least one or two more are needed at the present moment, and that, from this time forward, the greater part of the work of the museum should be done by regular salaried assistants, under the direction of the officers. I am by no means singular in these views; they are shared by many, if not the majority, of the Council, and have recently found support in the very pertinent expressions of Mr. Bentham, the learned President of the Linnean Society of London.

In his last address before that body, he reviews the operations of the American Societies of Natural History, and, referring in the sequel directly to our Institution, says:—

"In America, as in Europe, almost every Natural History Society, small or large, begins by contemplating the formation of a museum, undefined as to limits; contributions are invited, and donations thankfully received from every quarter, without reference to value or practical utility. At first, whilst the Librarian, Secretary, or other manager, takes a personal interest in the arrangement and exhibition of the objects received; when donors can bring their friends to see their contributions displayed on shelves or in glass cases, with their own names paraded on the cards; when most of the members of the Society have the new feeling of a personal share in the ownership of the collections; when the number of specimens received is blazoned forth as a matter of pride and gratification;—these incipient museums may have considerable influence in stimulating collectors and observers of nature. But after a time these collections outgrow the Society's means; the specimens which may be required for study or comparison are encumbered by a mass of trash presented by persons who do not know what else to

do with it, or who have attached a false value to the fruits of their own labors; the permanent officer can no longer have time to select for exhibition what is worthy of it, nor to arrange those which might be available for reference; and the Society cannot afford to maintain the necessary staff of keepers, even if they have a building large enough for the purpose. Packages and specimens are, however, still received, exhibited at meetings to elicit formal thanks, and then consigned to oblivion and decay in cupboards and garrets, the members generally taking no further interest in what they can make no further use of. If afterwards attention is called to this state of things, it may be felt that something must be done; the gratuitous aid of patriotic members is called in, and the museum may be more or less purged of trash, and partially arranged. But gratuitous aid, like voluntary subscriptions, is generally given on the spur of the moment, and can never be depended on for long-continued and ever-increasing demands; the collections relapse into a condition worse than the previous one, till at last the Society is obliged to dispose of them as a clog on, instead of an aid to, their operations. Such is the history of many a museum I could name, on the continent and at home, including our own; and such seems destined to be the career, on a large scale, of the Boston Society, notwithstanding its large invested funds, if something is not done to give it a permanent independence of individual, disinterested efforts. It is now in the gratuitous aid period; but when its present stores are doubled or quadrupled, when the thirteen or fourteen unpaid Curators must not only give their whole time to it, but require, each of them, one or more assistants to do the work usefully, it will not be done at all; and unless the Society receives that extensive support which can only be expected from the State, stowage, neglect, and destruction must ensue."

To these forcible words, no addition of my own is needed. I can only beg that, at an early day, they may receive the attention which their importance demands.

LETTERS RECEIVED

DURING THE YEAR ENDING APRIL 30, 1868.

From Dr. J. W. Dawson, Montreal, December 26th, 1867, in acknowledgment of his election as Honorary Member.

From Dr. G. L. Goodale, Saco, Me., March 5th, 1867; Rev. T. Coan, Hilo, Hawaii, March 15th, 1867; Dr. Carl Ritter von Scherzer, Vienna, November 5th, 1867; Mr. Andrew Murray, London, September 28th, 1867; Mr. Sanford B. Dole, Boston, April 22d, 1868, acknowledging their election as Corresponding Members.

From Mrs. E. B. Bryant, Boston, April 9th, 1868, in acknowledgment of the special act of the Council, electing her minor son a Life Member of the Society.

From Mr. W. H. Dall, St. Michaels, Russian America, August 1st, 1867, concerning his scientific labors in that region.

A circular from the Universitas Carolina Lundensis, March 9th, 1868, inviting the Society to attend the celebration of its two hundredth anniversary, in June. A circular from the Portland Society of Natural History, accompanying one from the Quekett Microscopical Club, and offering to aid in carrying out the objects of the club.

From the Kongelige Danske Videnskabernes Selskab, Kjöbenhavn, July 1st, 1865; the Royal Society of Edinburgh, January 1st, 1866; Universitas Lugduno-Batava, August 3d, 1866; Bataafsch Genootschap der Proefondervindelijke Wijsbegeerte te Rotterdam, August 21st, 1866; Société Royale des Sciences à Upsal, September 15th, 1866; Naturforschender Verein in Brünn, November 4th, 1866; Académie Royale des Sciences à Amsterdam, October 11th, 1866; Kaiserliche Akademie der Wissenschaften in Wien, November 15th, 1866; Superintendent of the Geological Survey of India, Calcutta, November 22d, 1866; Naturwissenschaftlicher Verein in Hamburg, December 1st, 1866; Director of the Ober-Realschule und Realgymnasium, St. Pölten, December 15th, 1866; Senckenbergische naturforschende Gesellschaft, Frankfurt am Main, December 20th, 1866; Akademie der Wissenschaften, St. Petersburg, December, 1866; Verein der Freunde der Naturgeschichte in Meklenburg, Neubrandenburg, January 5th, 1867; Smithsonian Institution, Washington, January 25th, 1867; St. Gallische naturwissenschaftliche Gesellschaft, St. Gallen, February, 1867; Naturhistorischer Verein der Preussischen Rheinlande und Westphalens, March 21st, 1867; Naturforschende Gesellschaft in Bern, March, 1867; Utrecht Society of Arts and Sciences, April 15th, 1867; Massachusetts Institute of Technology, May 7th, 1867; Kongelige Danske Videnskabernes Selskab i Kjöbenhavn, May 15th, 1867; Linnean Society, London, June 20th, 1867; Société Impériale Géographique de Russie, St.-Pétersbourg, July 10th, 1867; Mittelrheinischer geologischer Verein

Darmstadt, July, 1867; Regents of the University of the State of New York, Albany, August 2d, 1867; Massachusetts Horticultural Society, Boston, August 3d, 1867; Royal Society of London, August 13th, 1867; New York State Agricultural Society, Albany, August 29th, 1867; Literary and Philosophical Society of Manchester, September 5th, 1867; Verein der Freunde der Naturgeschichte in Meklenburg, Neubrandenburg, September 26th, 1867; New York State Agricultural Society, Albany, September 7th, 1867; K. K. Geographische Gesellschaft, Wien, September 10th, 1867; Royal Institution of Great Britain, London, September 11th, 1867; Leeds Philosophical and Literary Society, September 17th, 1867; K. K. geologische Reichsanstalt, Wien, September 23d, 1867; Philosophical Society, Glasgow, September 24th, 1867; Naturhistorisch-medizinischer Verein in Heidelberg, September 24th, 1867; Royal Society of Northern Antiquaries, Copenhagen, September 28th, 1867; Smithsonian Institution, Washington, September 28th, and October 8th, 1867; K. Bayerische botanische Gesellschaft, Regensburg, two letters, September 28th, 1867; Naturforschende Gesellschaft in Emden, October 9th, 1867; Naturforschende Gesellschaft, Basel, October 18th, 1867; Royal Physical Society of Edinburgh, October 31st, 1867; Académie Royale des Sciences à Amsterdam, October 12th, 1867; Massachusetts Institute of Technology, October 21st, 1867; Essex Institute, Salem, Mass., October 25th, 1867; Academy of Sciences, Chicago, October 28th, 1867; Société d' Agriculture, etc., du Département de la Lozère, Mende, October, 1867; Société d'Histoire Naturelle de Colmar, November 1st, 1867; Société d'Agriculture. etc., du Département de la Lozère, Mende, October, 1867; H. Crosse, Paris, November 1st, 1867; Senckenbergische naturforschende Gesellschaft, Frankfurt am Main, November 1st, 1867; Connecticut Academy of Arts and Sciences, New Haven, November 4th, 1867; Finska Läkare-Sällskapet, Helsingfors, November 7th, 1867; Prof. Hyrtl, Vienna, November 8th, 1867; Deutsche ornithologische Gesellschaft, Halle, November 8th, 1867; Real Academia de Ciencias, Madrid, November 12th, 1867; Kaiserliche Akademie der Wissenschaften, Wien, November 12th, 1867; Zoölogical Society of London, November 15th, 1867; Naturforschende Gesellschaft des Osterlandes zu Altenburg, November 15th, 1867; Institut National Genevois, Genève, November 17th, 1867; Ausschuss des Vorarlberger Landesmuseums, Bregenz, December 11th, 1867; Royal Society of Edinburgh, December 19th, 1867; Société Helvetique des Sciences Naturelles, Berne, 1867; Zoologisch-Mineralogischer Verein, Regensburg, two letters; Société Hollandaise des Sciences à Harlem, January 18th, 1868; Essex Institute, Salem, Mass., January 20th, 1868; American Entomological Society, Philadelphia, February 1st, 1868; Essex Institute, Salem, Mass., February 10, 1868; Smithsonian Institution, Washington, February 12th, 1868; Natural History Society of New Brunswick, St. John, February 18th, 1868; Essex Institute, Salem, Mass., March 28th, 1868; Lyceum of Natural History, New York, April 7th, 1868; Société Entomologique Suisse, Genève, acknowledging the receipt of the Society's publications.

From the Société des Sciences, des Arts et des Lettres du Hainaut, Mons, Belgium, May 26th, 1866, Comité Scientifique de la Marine Impériale Russe, St.-Pétersbourg, December 8th, 1866; K. K. Central-Anstalt für Meteorologie und Erdmagnetismus in Wien, December 31st, 1866; Società Italiana di Scienze Naturali, Milan, January 1st, 1867; Naturforschende Gesellschaft, Freiburg,

February 1st, 1867; K. Gesellschaft der Wissenschaften zu Göttingen, February 16th, 1867; Massachusetts Horticultural Society, March 8th, 1867; Museum at Bergen, Norway, March 9th, 1867; Société d'Agriculture, Sciences et Arts de la Sarthe, Le Mans, March 23d, 1867; Société des Sciences Physiques et Naturelles, Zurich, March 31st, 1867; Madras Literary Society, April 6th, 1867; Société des Sciences Physiques et Naturelle de Bordeaux, April 8th and 29th, 1867; K. Böhmische Gesellschaft der Wissenschaften, Prag, May 10th, 1867; Société Entomologique de Russie, St.-Pétersbourg, May 4th, 1867; K. Böhmische Gesellschaft der Wissenschaften, Prag, May 25th, 1867; Société Linnéenne de Bordeaux, June 6th, 1867; Académie des Sciences, Arts et Belles Lettres de Dijon, June 16th, 1867; Verein für vaterländische Naturkunde in Württemberg, July 1st, 1867; Naturwissenschaftlicher Verein für das Fürstenthum Lüneburg, July 3d, 1867; Entomological Society, London, September 20th, 1867; Naturforschender Verein in Brünn, September 25th, 1867; Liverpool Geological Society, November 1st, 1867; Société Impériale des Naturalistes de Moscou, November 4th, 1867; Verwaltungs-Ausschuss des Ferdinandeums zu Innsbruck, November 10th, 1867; Verein der Aerzte in Steiermark, Graz, November 20th, 1867; K. Bayerische Akademie der Wissenschaften, München, December 1st, 1867; Naturhistorischer Verein in Augsburg, December 10th, 1867; Société Royale de Botanique de Belgique, Bruxelles, December 21st, 1867; Naturhistorischer Verein für Anhalt, Dessau, January 31st, 1868; Naturwissenschaftlicher Verein für das Fürstenthum Lüneburg, February 3d, 1867; Société Hollandaise des Sciences à Harlem, acknowledging the receipt of the Society's publications and presenting their own.

From the Naturforschende Gesellschaft in Danzig, April 12, 1867, acknowledging the receipt of the Society's publications, and regretting that certain of their own asked for are out of print.

From the K. Gesellschaft der Wissenschaften zu Göttingen, October 10th, 1867, acknowledging the receipt of the Society's publications and promising to supply certain of their own if possible.

From the Naturwissenschaftlicher Verein, Hamburg, August 1st, 1866; Société Royale des Sciences à Upsal, two letters, October 1st, 1866; Naturforschender Verein in Brünn, October 27th, 1866; K. Akademie der Wissenschaften, Wien, October 30th, 1866; Superintendent of the Geological Survey of India, Calcutta, November 22d, 1866; K. Preussische Akademie der Wissenschaften, Berlin, December 10th, 1867; Senckenbergische naturforschende Gesellschaft, Frankfurt am Main, December 10th, 1866; Naturhistorische Gesellschaft, Nürnberg, two letters, December 31st, 1866; Société Provinciale des Arts et Sciences à Utrecht; Verein für siebenbürgische Landeskunde, Hermannstadt, January 12th, 1867; K. Bayerische Akademie der Wissenschaften, München, January 30th, 1867; K. Akademie der Wissenschaften, Wien, February 20th, 1867; Directeur du Musée publique de Buenos Aires, March 1st, 1867; Société Entomologique de France, Paris, May 7th, 1867: Society of Rural Economy of Southern Russia, Odessa, March 15th, 1867; K. Leopoldino-Carolinische Deutsche Akademie der Naturforscher, Dresden, April 1st, 1867; Naturforschende Gesellschaft in Danzig, April 4th, 1867; Utrecht Society of Arts and Sciences, April 15th, 1867; Naturforschende Gesellschaft in Bern, April 1867; Société Entomologique der Pays-Bas, Leide, May 5th, 1867; Société Hollandaise der Sciences à Harlem, May 25th, 1867;

Société des Sciences de Finlande, Helsingfors, June 13th, 1867; Société Impériale Géographique de Russie, St-Pétersbourg, July 23d, 1867; Société Linnéene de Lyon, July 1st, 1867; Curateurs de l'Université de Leyde, July 3d, 1867; K. Akademie der Wissenschaften, Wien, July 2d, 1867; Société de Physique et d'Histoire Naturelle de Genève, July 15th, 1867; K. Oeffentliche Bibliothek, St. Petersburg, July 18th, 1867; Royal Geographical Society, London, July 20th, 1867; Société d'Histoire Naturelle de Colmar, August 1st, 1867; Académie Impériale des Sciences, etc., de Lyon, August 1st, 1867; Société Impériale d'Agriculture, d'Histoire Naturelle, etc., de Lyon, August 1st, 1867; Naturforschende Gesellschaft, Freiburg, August 3d. 1867; K. Leopoldino-Carolinische Deutsche Akademie der Naturforscher, Dresden, August 3d, 1867; Société d'Histoire Naturelle de Colmar, August 5th, 1867; Mannheimer Verein für Naturkunde, August 20th, 1867; Schlesische Gesellschaft für vaterländische Cultur, Breslau, August 20th, 1867; Universitas Carolina Lundensis, August 23d, 1867; Académie Royale des Sciences, etc., de Belgique, Bruxelles, September 5th, 1867; Naturforscher Gesellschaft, Dorpat, September 12th, 1867; Société Scientifique de la Zélande à Middelbourg, October 20th, 1868; Senckenbergische naturforschende Gesellschaft, Frankfurt am Main, November 1st, 1867; Société Linnéene de Lyon, November 10th, 1867; Société des Sciences Naturelles de Neuchâtel, November 20th, 1867; K. Akademie der Wissenschaften, November 20th, 1867; K. Sächsische Gesellschaft der Wissenschaften, Leipzig, November 29th, 1867; Société d'Agriculture, Sciences, etc., du Puy, Le Puy, 1867; Société Hollandaise des Sciences à Harlem, January 12th, 1868; California Academy of Natural Sciences, San Francisco, January 13th, 1868; K. Gesellschaft der Wissenschaften zu Göttingen, February 16th, 1868; Akklimatisations-Verein in Berlin, February 18th, 1868; Cercle Artistique, Littéraire, et Scientifique d'Anvers, February 24th, 1868; Chicago Academy of Sciences, March 23d, 1868, presenting their various publications.

From the Verwaltungs-Ausschuss des Museums Francisco-Carolinum, Linz, December 21st, 1866; Historischer Verein, Ansbach, April 20th, 1867, presenting their publications, and requesting an exchange.

From the Deutsche geologische Gesellschaft, Berlin, May 18th, 1867, presenting its publications, and asking for the first volume of the Society's Proceedings.

From the Verein von Alterthumsfreunden im Rheinlande, Bonn, May 14th, 1867, Royal Danish Society, Copenhagen, May 14th, 1867; Naturhistorischer Verein, Dessau, January 10th, 1867, accepting the proposal to exchange, and sending their publications to the Society.

From the Society of Rural Economy of Southern Russia, Odessa, March 15th, 1867, accepting a proposal to exchange publications, and giving an account of that Society.

From the Philosophical and Literary and the Geological and Polytechnic Societies of Leeds, September 17th, 1867, promising deficient numbers of their publications to complete the Society's sets, as far as possible.

From the Société Impériale des Sciences Naturelles de Cherbourg, October 19th, 1867, asking for certain numbers of the Society's publications.

From Prof. Zantedeschi, Padova, November 28th, 1867, presenting a work, of which he is the author, entitled, *Intorno alla elettricità indotta o d'influenza negli strati aerei dell' atmosfera, che a forma di anello circondano una nube risolventesi in pioggia, neve o grandine.*

ADDITIONS TO THE LIBRARY

DURING THE YEAR ENDING APRIL 30, 1868.

The Intracranial Circulation. By Thomas Dwight, Jr. 8vo. Pamph. Cambridge, 1867. *From the Author.*

Human Cestoids; an Essay. By F. R. Sturgis. 8vo. Pamph. Cambridge, 1867. *From the Author.*

A Handbook to the Birds of Australia. By John Gould. Prospectus. 8vo. Pamph. *From the Author.*

The Great Crevasse of the Jordan and of the Red Sea. By Rev. Lyman Coleman, D.D. 8vo. Pamph. Easton, Pa., 1867. *From the Author.*

The Fruit-bearing belt of Michigan. By Prof. Alex. Winchell. 8vo. Pamph. Ann Arbor, 1867. *From the Author.*

A third study of the Icteridæ. By John Cassin. 8vo. Pamph. Philadelphia, 1867. *From the Author.*

Synopsis of the species of Starfish in the British Museum. By John Edward Gray. 4to. Pamph. London, 1866. *From the Author.*

Enumeration of Hawaiian Plants. By Horace Mann. 8vo. Pamph. Cambridge, 1867. *From the Author.*

Monographie de la Classe des Fougères, par J. E. Bommer. 8vo. Pamph. Paris, 1867. *From the Author.*

Notes on the Radiata in the Museum of Yale College, with descriptions of New Genera and Species. By A. E. Verrill. 8vo. Pamph. New Haven, 1867. *From the Author.*

Contributions to Chemistry and Mineralogy from the Laboratory of Harvard College. By Josiah P. Cooke, Jr. 8vo. Pamph. New Haven, 1867. *From the Author.*

Catalogue of Paintings of Fruits, etc., of the Valley of the Amazon, and other parts of Brazil. Executed in 1864-6. 8vo. Pamph. By W. Ingalls. *From the Author.*

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Catalogue of the Hirundinidae in the collection of the Academy of Natural Sciences of Philadelphia. By John Cassin. 8vo. Pamph. July 1st, 1853.

On the genera and species of Fossaridæ found in Japan. By Arthur Adams. 8vo. Pamph. London, 1863.

On some new species of Scissurellidæ from the Seas of China and Japan. By Arthur Adams. 8vo. Pamph. London, 1862.

On the Animal and Float of Ianthina. By Arthur Adams. 8vo. Pamph. London, 1862.

On the Japanese species of Siphonalia. By Arthur Adams. 8vo. Pamph. London, 1863.

Descriptions of five new Genera of Mollusca. By Henry and Arthur Adams. 8vo. Pamph. London, 1863.

On the Animal of Alycæus and some other Cyclophoroid Genera. By Arthur Adams. 8vo. Pamph. London, 1861.

On some new genera and species of Mollusca from the North of China and Japan. By Arthur Adams. 8vo. Pamph. London, 1861.

On the Species of Obeliscinæ found in Japan. By Arthur Adams. 8vo. Pamph. London, 1862.

Descriptions of some new species of Limopsis from the Cumingian Collection. By Arthur Adams. 8vo. Pamph. London, 1862.

On some new genera and species of Mollusca from Japan. By Arthur Adams. 8vo. Pamph. London, 1860.

On some additional new species of Pyramidellidæ from the Islands of Japan. By Arthur Adams. 8vo. Pamph. London, 1861.

On some new species of Acephalous Mollusca from the Sea of Japan. By Arthur Adams. 8vo. Pamph. London, 1862.

On the Animal and Affinities of the Genus Alaba. By Arthur Adams. 8vo. Pamph. London, 1862.

On the Animal of Umbonium vestiarium. By Arthur Adams. 8vo. Pamph. London, 1860.

On the genera and species of Liotiinæ found in Japan. By Arthur Adams. 8vo. Pamph. London, 1863.

On some new genera and species of Mollusca from the Seas of China and Japan. By Arthur Adams. 8vo. Pamph. London, 1864.

Descriptions of new species of shells from the Australian Seas, etc. By Arthur Adams. 8vo. Pamph. London, 1863.

On the Species of Pyramidellinæ found in Japan. By Arthur Adams. 8vo. Pamph. London.

Mollusca Japonica. By Arthur Adams. 8vo. Pamph. London, 1860.

On the Species of Muricinæ found in Japan. By Arthur Adams. 8vo. Pamph. London, 1862.

On a supposed new genus and on some new species of Pelagic Mollusca. By Arthur Adams. 8vo. Pamph. London, 1861.

On some new species of Cylichnidæ, Bullidæ, and Philinidæ, from the Seas of China and Japan. By Arthur Adams. 8vo. Pamph. London, 1862.

On some new species of Mollusca from Japan. By Arthur Adams. 8vo. Pamph. London, 1862.

Descriptions of a new genus and some new species of shells from the collection of Hugh Cuming, Esq. By H. Adams. 8vo. Pamph. London, 1861.

Description of a new genus and species of Mollusk. By Henry Adams. 8vo. Pamph. London, 1860.

Descriptions of new species of Cyrena, Corbicula and Sphærium. By Temple Prime. 8vo. Pamph. Philadelphia, 1861.

Paper on fresh water shells. By Mr. Lea. 8vo. Pamph. Philadelphia, 1842.

Description of twelve new species of Uniones. By Isaac Lea. 8vo. Pamph. Philadelphia, 1843.

Memoir of Charles B. Adams, late Professor of Zoology in Amherst College, Massachusetts. By Thomas Bland. 8vo. Pamph. Philadelphia, 1865.

On the Family Proserpinacea. By Thomas Bland. 8vo. Pamph. New York, 1863.

Remarks on the Origin and Distribution of the Operculated Land Shells which inhabit the Continent of America and the West Indies. By Thomas Bland. 8vo. Pamph. Philadelphia, 1866.

Publications of Isaac Lea on Recent Conchology. By George W. Tryon, Jr. 8vo. Pamph. Philadelphia, 1861.

Synonymy of the Species of Strepomatidæ. By George W. Tryon, Jr. 4 parts. 8vo. New York.

Report on the present state of our knowledge with regard to the Mollusca of the West coast of North America. By Philip P. Carpenter. 8vo. Pamph. London, 1857.

Illustrations Conchyliologiques. Siliquaria. Folio. Pamph.

A Revision of the History, Synonymy, and Geographical Distribution of the recent Terebratulæ. By Lovell Reeve. 8vo. Pamph. London.

Description de deux espèces nouvelles. Par M. Deshayes. 8vo. Pamph. Paris, 1861.

Observations sur les Aminaux de quelques genres de Mollusques Acéphalés. Par G.-P. Deshayes. 8vo. Pamph. London, 1853.

Anatomie comparée de divers types de Mollusques attribués au grand genre Hélice. Par M. G.-P. Deshayes. 8vo. Pamph. Paris, 1830.

American Conchology; or description of the Shells of North America. Illustrated by coloured figures. No. VIII. 8vo. Pamph.

Catalogue of Australian Land Shells. By James C. Cox, M.D. 8vo. Pamph. Sydney, 1864.

A Catalogue of the Mollusca of Northumberland and Durham. By Joshua Alder. 8vo. Pamph. Newcastle upon Tyne, 1848.

Observations on the Terrestial Pulmonifera of Maine. By Edward S. Morse. 8vo. Pamph. Portland, 1864.

On the Mollusca of Peconic and Gardiner's Bays, Long Island. By Sanderson Smith. 8vo. Pamph. New York, 1859.

Description of a new species of Amphioxus from Borneo. By J. E. Gray. 8vo. Pamph. London.

Notice sur la genre Neaera, Gray. Par M. H. Nyst. 8vo. Pamph. Anvers, 1860.

Catalogue of the Miocene Shells of the Atlantic Slope. By T. A. Conrad. 8vo. Pamph. New Haven.

Researches upon the Hydroblinæ and allied forms. By Dr. William Stimpson. 8vo. Pamph. Montreal, 1865.

Mr. Broderip's descriptions of Mr. Cuming's Shells. 8vo. Pamph. London.

Verzeichniss der Conchilien-Sammlung des verstorbenen Herrn Consul Gruner. 8vo. Pamph. Bremen, 1857.

A Monograph of the Helices of the United States. By Amos Binney, M.D. No. 1. 8vo. Pamph. Boston, 1837.

Expedition Shells. By Augustus A. Gould. 8vo. Pamph. Boston, 1846.

Nucula. 8vo. Pamph.

Review of the Northern Buccinums. Part 1. By Dr. William Stimpson. 8vo. Pamph. Montreal, 1865.

Introduction to the Mollusca of the U. S. Exploring Expedition. By Augustus A. Gould, M. D. 4to. Pamph.

A Flora and Fauna within living animals. By Joseph Leidy, M. D. 4to. Washington, 1851.

Researches on the Foraminifera. By William B. Carpenter. Parts 1–2. 4to. London, 1855–6.

Description des animaux sans Vertèbres découverts dans le Bassin de Paris. Par G.-P. Deshayes. 30 Livraisons in 15. 4to. Paris, 1857–8.

A Monograph on the Fossil Lepadidæ, or, Pedunculated Cirripedes of Great Britain. By Charles Darwin. 4to. London, 1851.

A Monograph on the Fossil Balanidæ and Verrucidæ of Great Britain. By Charles Darwin. 4to. London, 1854.

Conchological Papers, by Couthouy, Lea and others. 4 vols. 8vo.

Zoological Papers, by Agassiz, Bachman and others. 2 vols. 8vo.

Geological Papers, by Lyell, Dana, and others. 2 vols. 8vo.

Contributions to Conchology. By C. B. Adams. 1 vol. 8vo.

Berichte über die Versammlung deutscher Naturforscher und Ærzte. Breslau, 1833; Jena, 1836; Prag, 1837; Gratz, 1843. 4to.

Archiv für Anthropologie. Bänd. I–II. 4to. Braunschweig, 1866–8.

Annals and Magazine of Natural History. 3d Series, Nos. 67, 95, 112. 8vo. London, 1863.

Photographs of Dr. T. W. Harris.

A Synopsis of the Classification of British Palæozoic Rocks, by the Rev. Adam Sedgwick. With descriptions of Fossils, by Frederick McCoy. Fasc. II. 4to. London, 1852.

Dr. Heinrich Berghaus' Physikalischer Atlas. 2 vols. Folio. Gotha, 1852.

Manual of the Botany of the Northern United States. By Asa Gray. 5th Edition. 8vo. New York, 1868. *By Purchase.*

Manual of the Practical Naturalist. 8vo. Boston, 1831.

The Naturalist's and Traveller's Companion. By John Coakley Lettsom, M. D. 8vo. London, 1799.

Dictionnaire raisonné, étymologique, synonymique et polyglotte, des Termes usités dans les Sciences Naturelles. Par. A.-J.-L. Jourdan. 8vo. 2 Tomes. Paris, 1834.

Histoire des Progrès des Sciences Naturelles, depuis 1789, jusqu'à ce jour. Par M. le Baron G. Cuvier. 2 Tomes. 8vo. Bruxelles, 1837–8.

Three Physico-Theological Discourses. By John Ray. 8vo. London, 1732.

Micrographia; or some Physiological Descriptions of Minute Bodies made by magnifying glasses. By R. Hooke. Folio. London, 1667.

History of the Cotton Manufacture in Great Britain. By Edwards Baines, Jr. 8vo. London, 1835.

Reports of the first, second and third meetings of the Association of American Geologists and Naturalists. 8vo. Boston, 1843.

Description des Coquilles Fossiles de la Famille des Rudistes qui se trouvent dans le Terrain Crétacé des Corbieres (aude). Par Oscar Rolland du Roquan. 4to. Carcassonne, 1841.

Scrap-book belonging to Dr. Amos Binney. 4to.

The Canadian Naturalist. By P. H. Gosse. 8vo. London, 1840.

Aristotelis Historia Animalium ex recensione Immanuelis Bekkeri. 8vo. Berolini, 1829.

Onomasticon Zoicon, Plerorumque Animalium Differentias et Nomina Propria pluribus Linguis exponens. Autore Gualtero Charletono. 4to. 1868.

Werner's Nomenclature of colours, with additions arranged so as to render it highly useful to the Arts and Sciences. By Patrick Syme. 8vo. Edinburgh, 1821.

The Revolt of the Bees. 3d Edition. 8vo. London, 1839.

On the causes, Cure and Prevention of the Sick-Headache. By James Meade, M.D. 8vo. Philadelphia, 1832.

Catalogues of the Animals and Plants of Massachusetts. With a copious Index. 8vo. Amherst, 1835.

Zoological Survey of the State. Report on the Quadrupeds. By Ebenezer Emmons, M.D. 8vo. Cambridge, 1840.

Reports on the Herbaceous Plants and on the Quadrupeds of Massachusetts. 8vo. Cambridge, 1840. (2 copies.)

Report of the Engineer and Geologist, in relation to the New Map, to the Executive of Maryland. 8vo. Annapolis, 1836.

Catalogue des Mollusques Terrestres et Fluviatiles, observés dans les Possessions Françaises au Nord de l'Afrique, par M. Terver. 8vo. Pamph. Paris, 1839.

Prospetto Sistematico-Statistico dei Molluschi Terrestri e Fluviali viventi nel Territorio di Lugano dell' ab Guiseppe Stabile. 8vo. Pamph. Milano, 1859.

Traité Elementaire de Conchyliologie, avec l'Application de cette Science à la Géognosie. Par G.-P. Deshayes. 8vo. Paris.

Paléontologie Française. Par Aicide d' Orbigny. 2 Tomes. 8vo. Paris, 1847.

Des Microscopes et de leur Usages. Par Charles Chevalier. 8vo. Paris, 1839.

The Civil and Natural History of Jamaica. By Patrick Browne, M.D. Folio. London, 1789.

Description of the Hydrarchos Harlani. By Doctor Albert C. Koch. 8vo. Pamph. New York, 1845. *Deposited in the Binney Library.*

Frederick the Great and his Family. An Historical Novel. By L. Mühlbach. Translated from the German by Mrs. Chapman Coleman and her Daughters. 8vo. New York, 1867.

Hardwicke's Science Gossip; an illustrated Medium of Interchange and Gossip for Students and Lovers of Nature. Edited by M. L. Cooke. 1865, 1866. 8vo. London.

Homes without Hands. Being a description of the Habitation of Animals, classed according to their principle of Construction. By Rev. J. G. Wood. 8vo. New York, 1866.

The Herring, its Natural History and National Importance. By John M. Mitchell. 8vo. Edinburgh, 1864.

Critical and Miscellaneous Essays. By T. Babington Macaulay. Vols. I–V. 8vo. Philadelphia, 1854.

Origin and History of the Books of the Bible. By Prof. C. E. Stowe, D.D. 8vo. Hartford, 1867.

Life and Times of Frederick Perthes. 8vo. New York, 1867.

The early years of His Royal Highness the Prince Consort. Compiled under the Direction of Her Majesty the Queen, by Lieut.-General the Hon. C. Grey. 8vo. New York, 1866.

Life of Josiah Quincy of Massachusetts. By his Son, Edmund Quincy. 8vo. Boston, 1868.

A Journey in Brazil. By Professor and Mrs. Louis Agassiz. 8vo. Boston, 1868.

Letters and Journals relating to the War of the American Revolution. By Mrs. General Riedesel. 8vo. Albany, 1867.

The Life and Teachings of Confucius, with Explanatory Notes. By James Legge, D.D. 8vo. Philadelphia, 1867.

Sound. By John Tyndall, LL.D. 8vo. New York, 1867.

Three English Statesmen. By Goldwin Smith. 8vo. New York, 1867.

Life and Letters of Madam Swetchine. By Count de Falloux. 16mo. Boston, 1868. *Deposited by the Republican Institution.*

ADDITIONS TO THE MUSEUM

DURING THE YEAR ENDING APRIL 30, 1868.

May 15, 1867. Marl from the West Jersey Company's pits, Glassboro, N. J. by Mr. C. K. Landis. Section from the charter oak of Hartford, Ct., by Mr. S. H. Scudder. Nuts from China, by Dr. S. Green. Two specimens of oxide of manganese by Hon. Albert Fearing. Specimens of ochre and the rock in which it occurs from Lexington, Mass., by Dr. S. Kneeland.

June 5. A bird from Wellfleet, Mass., by Mr. C. Cowing. A golden-crowned thrush from Brookline, Mass., by Mr. J. E. Cabot. Skin of common sheep; seeds and seed-vessels of mahogany, etc.; stalk of sugar cane and asphaltum from Barbadoes; *Vellela* and crustaceans from the N. Atlantic, by Dr. J. B. S. Jackson. A pair of elk horns, fossil wood and pebbles from Columbia River, Oregon; bark and foliage of *Wellingtonia gigantea* from Colmesos Grove, Cal.; cinnabar from New Almaden mines, Cal.; black oxide of manganese from San Francisco Bay, Cal.; soap plant and indian implement from California; silver ore from Virginia City and Egon Cañon, Nevada; copper ore from Colorado River, Arizona; *siempre viva* and shells from Acapulco, Mex.; and Indian implements from Maine, by Mr. C. A. Stearns. Ore from the Cheever ore bed, Port Henry, N. Y., by Mr. O. S. Presbrey.

June 19. Auriferous and argentiferous galena and quartz, black blende, automatite, auriferous copper pyrites, gold quartz and talco-micaceous slate, from Bridgewater, Vt., by Dr. C. T. Jackson.

July 3. A collection of Japanese Lepidoptera and a specimen of *Saturnia ceanothi* Behr and its cocoon from San Francisco, Cal., by Mr. Samuel Hubbard. Horned toad, reptiles and insects preserved in alcohol, by Mr. A. Reynolds. Tree frog from Hempstead, Long Island, by Mr. F. G. Sanborn.

September 18. Dendrites and egg of cow bunting from Dorchester, Mass., by Mr. D. F. Carlton. A flying fish from the South Pacific, by Dr. J. Homans. Amianthus from Brookline, Mass., by Miss Blaikie. *Philampelus satellitia* from Beverly, Mass., by Mr. T. Lyman. An hemipterous insect from Boston, by Dr. Talbot. Luminous larvæ of Coleoptera from Brookline, by Mr. E. C. Cabot. *Tenthredo* from Boston, by Mr. L. Wetherell. A mounted loon, by Mr. S. H. Sylvester. Post pliocene fossils from the mouth of the Kennebec River, by Mr. A. A. Kingman. Model of the "Old Man of the Mountains," Franconia Notch, N. H., by Mr. R. C. Greenleaf. A white mouse from Framingham, Mass., by Mr. James W. Clark. Florida gallinule, from Easton's Pond, Newport, R. I., by Mr. John Ennis.

October 2. Iron ore from Franklin Fall, Franklin Co., N. Y., by Mr. Gordon

C. Lane. Salamanders, tree frog and mice from Fire Island beach, Long Island; pickerel from Andover, by Mr. F. G. Sanborn. Calamites from Olive Quarry, St. John, N. B., by Mr. G. Barry. Rod of granite, by Dr. B. Joy Jeffries. Larvæ of dragon flies from the stomach of a trout, taken in Profile Lake, White Mts. N. H.; green snake from Needham, Mass., by Mr. R. C. Greenleaf.

October 16. Fungus from White Mts., N. H., by Dr. S. A. Bemis. Larva of an insect from Cohasset, by Dr. S. Kneeland. Minerals from Arrowsic Island off Bath, Me., by Mr. C. J. Sprague. Double butternut from Grafton, Mass., by Mr. W. T. Brigham.

November 6. Spatangoid from West Indies, by Mr. Frank A. Andrews. Cast skin of a black snake from Michigan, by Mrs. D. D. Hughes. *Diapheromera femorata* from Winchester, Mass., by Captain Lewis. Fourteen birds and a pipe fish from Madras, India, by Mr. P. R. Hunt. Body of an African goat from Cape Palmas, by Mr. W. W. Goodhue. White owl from South Weymouth, Mass., by Mr. E. C. Derby. Malformed bone of a chicken, by Mr J. L. Little, Jr. Centipede, by Mr Chas. Q. Hill. Snail by Dr. J. Homans, Jr. Birds nest from Calcutta, and lizard, by Mr. W. T. Brigham. Skull of Apache Indian, *Canis atrans*, *Lepus*, skins of prairie wolf, rattle of rattlesnake, stone axe head used by Apache Indians and minerals from Arizona; ores from California and Mexico, by Dr. J. W. Merriam. Iron ores and glass sandstone from Sylvania, by Mr. J. W. Clarke.

November 20. Flamingo from Madras, India, by Mr. P. R. Hunt. Fossil wood from Australia, by Dr. F. Mueller. Prepared skull of human fœtus, by Dr. W. M. Ogden. An extensive collection of nests and eggs of birds, chiefly American, by Mrs. Dr. Henry Bryant. Fruit of Osage orange, by Mr. W. T. Brigham. Lignite from Martha's Vineyard, by Mr. J. C. J. Brown, Jr. Model of the "welcome nugget" of gold, and Relief Maps of Vesuvius, Etna and Bourbon, by purchase.

December 4. Specimens of a *Lachnus* from the linden trees in Boston, by Mr. S. H. Scudder. *Saturnia Polyphemus* found on Arbor vitæ, by Mr. J. C. Merrill, Jr. Rock specimens from Jonesport, Me., by Mr. D. Wellington. Nest of squirrel made in the nest of a catbird from Middleton, Mass., by Rev. J. M. Hubbard. Spine of a ray from Cape Charles, Chesapeake Bay, by Mr. J. R. Johnson.

December 18. Quicksilver from California, by Mr W. H. Logan. Mammals from Germany, by Mr. Jacob Norton. Bitter oranges from New Orleans, by Dr. S. Kneeland. Crystals of mica from Buckfield, Me., by Mr. J. J. May.

January 3, 1868. Soundings from a depth of ten and twenty-five fathoms off. Mt. Desert Island, Me.; deposit of Salt Spring, and specimens of the mud-lumps of the delta of the Mississippi, by Mr. C. P. Dillaway. Building stones of the public buildings in Washington, by the Smithsonian Institution. Shells from near Capetown, Africa, by Mrs. Winslow. Birds from New Brunswick and Maine, by Mr. G. A. Boardman. Variegated clays from Martha's Vineyard, by Mr. J. C. J. Brown, Jr. Insects from various localities, by Miss Lucy Brewer.

January 15. Relief maps of Palma and Teneriffe, by purchase. Lichen from

St. Stephen, N. B., by Miss Lydia B. Felt. A collection of six hundred and fifty fishes from various small streams in central Iowa, forty-four reptiles, forty-three Insects, twenty-nine Crustacea, one hundred and eighty-two Mollusca and thirty worms from Iowa, by purchase. Woody bodies from bark of white pine in Templeton, Mass., by Mr. Lucas Baker. Skin of bald eagle, from vicinity of Boston, by Mr. James Ritchie. Land shells from Kahlenberg, near Vienna and salt from mines near Hallstadt, by Dr. F. H. Brown. A wasp's nest from Wilton, N. H., by Mr. E. N. Abbot.

February 5. Fragment of oak enclosing stone, Sutton, Mass., by Mr. H. D. Barnes. A flying fish from near Bermudas, blind fish and craw fish from Mammoth Cave, Ky., by Mr. N. H. Bishop. A collection of seventy-five nests, one hundred and seventy eggs, forty-four skins and four heads of North American Birds and skin of *Lepus campestris* from Fort Anderson, by the Smithsonian Institution. An owl from Westboro', Mass., by Mr. Frank Perrin.

A collection of about one hundred thousand insects in alcohol, six thousand butterflies, two thousand three hundred birds, three hundred mollusca, seventy-five reptiles, seventy-five fish and five mammals from Guatemala, by purchase.

Febuary 19. A mouse, twenty-three lizards, six fishes, one hundred larvæ and pupæ of insects, one hundred other insects of various orders, besides one hundred and fifty spiders and myriapods, thirty crustacea, and fifty mollusca from Punahoa, Hawaiian Islands; Orthoptera from Hong Kong and fourteen insects from Calcutta, by Mr. W. T. Brigham; one hundred Odonata from Plymouth, N. H., Waterbury, Vt., Quincy and Cambridge, Mass.; Orthoptera from Mass. and N. H., by Mr. J. C. Merrill, Jr. Cocoon of *Samia Cecropia* from Boston, by Mr. S. H. Scudder. Gills of sword-fish from the Atlantic, by Mr. Edwin Bicknell. An ant's nest found in an herbarium, and other insects from South Malden, Mass., by Rev. J. F. Holton. Flying fish with barnacles attached, taken in latitude 27°, longitude 26° 20′, by Capt. N. E. Atwood. Fossil or submarine guano from near Charleston, S. C., by Dr. C. T. Jackson. Cones of *Pinus strobi* from peat bogs in Framingham, Mass., by Dr. E. Lewis Sturtevant; a mouse with diseased head from Boston, by Mr. J. L. Little, Jr.

March 4. A collection of over seven hundred humming birds and seventy-five nests of humming birds, and a large collection of West Indian Mollusca, by Mrs. Dr. Henry Bryant. A bat, reptiles, fish, insects, crustaceans, mollusks and echinoderms from Saba, Netherland West Indies, and of reptiles, fishes and mollusks from the Island of Testegus, by Dr. G. H. Brown.

March 18. Fungi and specimens of wood from North Wrentham, Mass., by Mr. Luther Hills. Red Squirrel with a white tail from Hardwick, Mass., by Mr. S. J. Mixter. Skin and bones of a caribou from Moosehead Lake, Me. by Messrs C. D. and J. H. Presho. Two living specimens of *Belostoma* from Milton, Mass., by Mr. J. W. Brooks. Cocoon of *Samia cecropia* from Boston, by Mr. A. A. Kingman. Wood of a tree showing the annual growth and cocoon of the bee moth, by Dr. C. E. Ware. Fossil shells from the middle of the boundary line between Illinois and Indiana, by Mr. R. C. Stone. *Cicada* from Bridgewater, Mass., by Mr. D. M. King. *Epeira*, by Mr. R. C. Greenleaf. Fossils from Sumner Co., Tenn., shells from Natchez Bluff, Miss., and concretions from Tennessee, by Mr. H. J. Huntington.

April 1. A gnarled root of spruce from Mt. Washington N. H., by Mr. F. G. Sanborn. Fossil plant from Newport, R. I.; rock salt from the island of Petit Ance, Vermillion Bay, Bayou Têche, La., by Hon. David Sears. A series of specimens from the lacustrine deposits in Robenhausen near Zurich, Switzerland, by Mr. C. H. Dalton.

April 15. Photograph of a bent grave stone in Philadelphia, by Mr. G. L. Vose. A collection of New England *Characeæ* and of Vermont *Boleti*, by Mr. C. C. Frost. Specimens of Coquina from near St. Augustine, by Dr. H. P. Bowditch. A specimen of *Euplectella speciosa* from the Island of Zebu, Philippine Islands, by Capt. Daniel H. Hutchinson.

April 22. Six nests of ants, of four species, from Hingham, Mass., by Messrs. F. W. and W. T. Brewer.

REPORT OF THE TREASURER

ON THE

FINANCIAL AFFAIRS OF THE SOCIETY,

FOR THE YEAR ENDING APRIL 30, 1868.

REPORT OF E. PICKERING, TREASURER,

ON THE

FINANCIAL AFFAIRS OF THE SOCIETY,

For the year ending April 30, 1868.

The Receipts and Expenditures for the year have been as follows:

Receipts.			
Dividends and Interest			$9,091.66
Annual Assessments			1,090.00
Admission Fees			210.00
Life Membership			100.00
Walker Fund Income (one half.)			1,233.15
Courtis " "			600.00
Pratt " "			570.00
Paschal P. Pope bequest			18,800.00
H. Harris "			5,000.00
W. J. Walker "			10,000.00
Total			$46,694.81
Expenditures.			
New Building, Furniture, Cases, &c.		$24,152.68	
Repairs of Building		1,080.61	
Cabinet		2,653.36	
Library		465.19	
Memoirs and Proceedings	$3,981.16		
Less amount of subscription and sale	530.31		
		3,450.95	
Salaries and wages		4,837.00	
Gas		114.88	
Fuel		885.00	
Insurance		498.75	
Lectures	$266.38		
Less received from sale of tickets	152.00		
		114.38	
General Expenses		1,418.54	$39,161.34
Excess of Receipts over Expenditures			$7,533.47

The following is a statement of the Property of the Society, exclusive of the Cabinet and Library.

New Building.		
Cost of Building and Furniture, per last Report . .	$112,441.46	
Expended during the year	23,588.73	
		$136,030.19
Bulfinch St. Estate Fund.		
Note secured by mortgage	$15,000.00	
U. S. 5-20 Bonds, $7,550, costing	7,629.00	
		22,629.00
Curtis Fund.		
St. Louis City Bonds, $10,000		10,000.00
Walker Fund.		
Notes secured by mortgage	$41,105.00	
U. S. 5-20 Bonds, $3,850, costing	4,179.41	
Cash	27.15	
		45,311.56
H. F. Wolcott Fund.		
U. S. 5-20 Bonds, $5,400, costing	$5,429.50	
Cash	15.51	
		5,445.01
S. P. Pratt Fund.		
N. Y. Central Railroad Bonds, $10,000		10,000.00
General Fund.		
17 Shares Bates Manufacturing Co.	$2,975.00	
35 " Everett Mills	4,900.00	
30 " Hamilton Woollen Man. Co.	10,500.00	
1 " Lawrence Man. Co.	925.00	
80 " Washington Mills	13,600.00	
12 " Cocheco Man. Co.	7,200.00	
2 " Lowell Man. Co.	1,800.00	
4 " Laconia Man. Co.	5,000.00	
3 " Pepperell Man. Co.	3,750.00	
11 " Neptune Ins. Co.	2,486.00	
18 " Boston Ins. Co.	2,430.00	
114 " Vermont and Canada R. R. Co.	11,400.00	
50 " Michigan Central R. R. Co.	5,662.75	
$10,000 Bonds, Vermont & Canada and Vermont Central R. R. Co.	10,350.00	
$10,000 Bonds, Albany 6's	9,350.00	
$10,000 Bonds, Chicago & N. Western R. R. Co., 10's .	10,000.00	
$5,000 Bonds, Cook Co. (Illinois) 7's	4,750.00	
$300 U. S. 5-20 Bonds, $300, costing	322.50	
Note Receivable secured by mortgage	3,000.00	
		110,401.25
Miscellaneous.		
Unsettled Accounts	$38.76	
Cash on hand	855.02	$893.78
Total		$340,710.79
Value of Property May 1, 1867		294,453.41
Increase of value May 1, 1868		$46,257.38

REPORT OF E. PICKERING, TREASURER,

ON THE

FINANCIAL AFFAIRS OF THE SOCIETY,

For the year ending April 30, 1868.

The Receipts and Expenditures for the year have been as follows:

Receipts.			
Dividends and Interest			$9,091.66
Annual Assessments			1,090.00
Admission Fees			210.00
Life Membership			100.00
Walker Fund Income (one half.)			1,233.15
Courtis " "			600.00
Pratt " "			570.00
Paschal P. Pope bequest			18,800.00
H. Harris "			5,000.00
W. J. Walker "			10,000.00
Total			$46,694.81
Expenditures.			
New Building, Furniture, Cases, &c.		$24,152.68	
Repairs of Building		1,080.61	
Cabinet		2,653.36	
Library		465.19	
Memoirs and Proceedings	$3,981.16		
Less amount of subscription and sale	530.31		
		3,450.95	
Salaries and wages		4,837.00	
Gas		114.88	
Fuel		385.00	
Insurance		498.75	
Lectures	$266.38		
Less received from sale of tickets	152.00		
		114.38	
General Expenses		1,413.54	$39,161.34
Excess of Receipts over Expenditures			$7,533.47

The following is a statement of the Property of the Society, exclusive of the Cabinet and Library.

New Building.		
Cost of Building and Furniture, per last Report . .	$112,441.46	
Expended during the year	23,588.73	
		$136,030.19
Bulfinch St. Estate Fund.		
Note secured by mortgage	$15,000.00	
U. S. 5-20 Bonds, $7,550, costing	7,629.00	
		22,629.00
Curtis Fund.		
St. Louis City Bonds, $10,000		10,000.00
Walker Fund.		
Notes secured by mortgage	$41,105.00	
U. S. 5-20 Bonds, $3,850, costing	4,179.41	
Cash	27.15	
		45,311.56
H. F. Wolcott Fund.		
U. S. 5-20 Bonds, $5,400, costing	$5,429.50	
Cash	15.51	
		5,445.01
S. P. Pratt Fund.		
N. Y. Central Railroad Bonds, $10,000		10,000.00
General Fund.		
17 Shares Bates Manufacturing Co.	$2,975.00	
35 " Everett Mills	4,900.00	
30 " Hamilton Woollen Man. Co.	10,500.00	
1 " Lawrence Man. Co.	925.00	
80 " Washington Mills	13,600.00	
12 " Cocheco Man. Co.	7,200.00	
2 " Lowell Man. Co.	1,800.00	
4 " Laconia Man. Co.	5,000.00	
3 " Pepperell Man. Co.	3,750.00	
11 " Neptune Ins. Co.	2,486.00	
18 " Boston Ins. Co.	2,430.00	
114 " Vermont and Canada R. R. Co.	11,400.00	
50 " Michigan Central R. R. Co.	5,662.75	
$10,000 Bonds, Vermont & Canada and Vermont Central R. R. Co.	10,350.00	
$10,000 Bonds, Albany 6's	9,350.00	
$10,000 Bonds, Chicago & N. Western R. R. Co., 10's .	10,000.00	
$5,000 Bonds, Cook Co. (Illinois) 7's	4,750.00	
$300 U. S. 5-20 Bonds, $300, costing	322.50	
Note Receivable secured by mortgage	3,000.00	
		110,401.25
Miscellaneous.		
Unsettled Accounts	$38.76	
Cash on hand	855.02	$893.78
Total		$340,710.79
Value of Property May 1, 1867		294,453.41
Increase of value May 1, 1868		$46,257.38

A large portion of the stocks constituting the General Fund were received from the estate of the late Dr. W. J. Walker, and stand upon the books at the value at which they were then appraised. Some of them have since fallen in value, but the depreciation is believed to be in most instances temporary. The Library and Collections are not included in the above statement, not being susceptible of accurate valuation ; and the value of the building is assumed to be increased by the amount expended in completing and furnishing it during the past year.

All which is respectfully submitted,

E. PICKERING, Treasurer.

REPORT OF THE TRUSTEES

ON THE

TRUST FUNDS OF THE SOCIETY,

FOR THE YEAR ENDING APRIL 30, 1868.

Dr. THOS. T. BOUVÉ, CHAS. J. SPRAGUE AND EDWARD PICKERING, TRUSTEES, IN ACCOUNT WITH THE WALKER FUND OF THE BOSTON SOCIETY OF NATURAL HISTORY. **Cr.**

1867. Sept.	To Cash, Interest, six months, on Mortgage Note of P. Hubbell and J. A. Turner	$750.00	1867. Sept.	By Cash paid to Treasurer, one-half of amount received on date for Interest on Note ($750)	$375.00
Oct.	" Interest, six months, on W. Mountfort's Note	483.15		" paid to Trustees of Walker Prize Fund	375.00
1868. March 1.	" Interest, six months, on Mortgage Note of P. Hubbell and J. A. Turner	750.00	Oct.	" paid to Treasurer, one half of amount received on date	241.58
April 7.	" Interest, six months, on W. Mountfort's Note	483.15		" paid to Trustees of Walker Prize Fund, one half of amount received on date	241.57
			1868. March 1.	" paid to Treasurer, one half of amount received on date	375.00
				" paid to Trustees of Walker Prize Fund	375.00
				" paid to Treasurer, one half amount received on date	241.58
				" paid to Trustees of Walker Prize Fund, one half amount received	241.57
		$2,466.30			$2,466.30

Errors Excepted. Boston, April 30, 1868.

THOS. T. BOUVÉ,
CHAS. JAS. SPRAGUE,
E. PICKERING,
} TRUSTEES.

April 30, 1868. The Property of this Fund on date, consists of Mortgage Notes amounting to $41,105.00

Dr. Thos. T. Bouvé, Chas. J. Sprague and Edward Pickering, Trustees, in account Cr. with the Bulfinch Street Estate Fund of the Boston Society of Natural History.

1867.			1867.		
Apr. 30.	To Balance of account on date	$118.21	July.	By Cash paid for $6,050 5-20 U. S. Bonds, received in exchange for 7 3-10's, sold as per opposite . . .	$6,050.00
July.	Cash received for $6,050 U.S. 7 3-10 Bonds, exchanged for 5-20's same amount	6,050.00		" paid for $800 5-20 U. S. Bonds .	842.48
	" received, Interest on above . .	286.46			
	" " " 6 months on J. B. Smith's note for $15,000 . .	450.00	1868. Jan.	" paid for $700 " " " .	736.75
1868. Jan.	" received for Interest, Coupons .	274.33			
	" " Interest 6 months on J. B. Smith's note	450.00			
Apr. 30.	Balance due to the Trustees on date .	23			
		$7,629.23			$7,629.23
			1868. Apr. 30.	By Balance due the Trustees on date . .	.23

Errors Excepted. Boston, April 30, 1868.

THOS. T. BOUVÉ,
CHAS. JAS. SPRAGUE,
E. PICKERING, } Trustees.

April 30, 1868. The Property of this Fund on date consists of	
Mortgage Note for	15,000.00
U. S. Bonds $7,550, which cost	7,629.23
	$22,629.23
Less due the Trustees	.23
	$22,629.00

Dr. THOS. T. BOUVÉ, CHAS. J. SPRAGUE AND EDWARD PICKERING, TRUSTEES, IN ACCOUNT WITH THE WOLCOTT FUND OF THE BOSTON SOCIETY OF NATURAL HISTORY. **Cr.**

1867. July.	To Cash received for U. S. 7-30 Bonds, sold	$5,000.00	1867. July.	By Cash paid for U. S. 5-20 Bonds, received in exchange for same amount of 7 3-10 (sold as per opp. entry)	$5,000.00
1868. Jan.	" " Interest on Bonds . .	236.75	July.	" paid for U. S. 5-20 Bonds $200 .	219.00
	" " " " U. S. Bonds .	208.26	1868. Jan.	" " " " " " $200 .	210.50
					$5,429.50
			Apr. 30.	Balance to new account	15.51
		$5,445.01			$5,445.01
Apr. 30.	To Cash balance on hand on date . .	15.51			

Errors Excepted. Boston, April 30, 1868.

THOS. T. BOUVÉ,
CHAS. JAS. SPRAGUE,
E. PICKERING, } TRUSTEES.

April 30, 1868. The Property of this Fund on date consists of U. S. 5-20 Bonds, $5,400, which have cost	$5,429.50
To Cash on hand	15.51
	$5,445.01

Dr. THOS. T. BOUVÉ, CHAS. J. SPRAGUE AND EDWARD PICKERING, TRUSTEES, IN ACCOUNT WITH THE PRATT FUND OF THE BOSTON SOCIETY OF NATURAL HISTORY. **Cr.**

1867. Oct. 26.	To Cash received, three per cent. on $10,000 New York Central Railroad Bonds, less Tax . . .	$285.00	1867. Oct. 26.	By Cash paid to the Treasurer towards fitting up the cases in the conchological room, and for the services of E. S. Morse in arranging the collection of shells for scientific exhibition	$285.00
1868. April 30.	" " received, three per cent. on $10,000 New York Central Railroad Bonds, less Tax . . .	285.00	1868. April 30.	" " paid the Treasurer for above purposes	285.00
		$570.00			$570.00

Errors Excepted. Boston, April 30, 1868.

THOS. T. BOUVÉ,
CHAS. JAS. SPRAGUE,
E. PICKERING,
} TRUSTEES.

April 30, 1868. The Property of this Fund consists on date of
10 New York Central Railroad Bonds, $1000 each, six per cent. $10,000.00

Dr. THOS. T. BOUVÉ, CHAS. J. SPRAGUE AND EDWARD PICKERING, TRUSTEES, IN ACCOUNT WITH THE WOLCOTT FUND OF THE BOSTON SOCIETY OF NATURAL HISTORY. **Cr.**

1867. July.	To Cash received for U. S. 7-30 Bonds, sold	$5,000.00	1867. July.	By Cash paid for U. S. 5-20 Bonds, received in exchange for same amount of 7 3-10 (sold as per opp. entry)	$5,000.00
	" " Interest on Bonds . .	236.75	July.	" paid for U. S. 5-20 Bonds $200 .	219.00
1868. Jan.	" " " " U. S. Bonds .	208.26	1868. Jan.	" " " " " " $200 .	210.50
					$5,429.50
			Apr. 30.	Balance to new account	15.51
		$5,445.01			$5,445.01
Apr. 30.	To Cash balance on hand on date . .	15.51			

Errors Excepted. Boston, April 30, 1868.

THOS. T. BOUVÉ,
CHAS. JAS. SPRAGUE, } TRUSTEES.
E. PICKERING,

April 30, 1868. The Property of this Fund on date consists of U. S. 5-20 Bonds, $5,400, which have cost	$5,429.50
To Cash on hand	15.51
	$5,445.01

DR. THOS. T. BOUVÉ, CHAS. J. SPRAGUE AND EDWARD PICKERING, TRUSTEES, IN ACCOUNT WITH THE PRATT FUND OF THE BOSTON SOCIETY OF NATURAL HISTORY. CR.

1867. Oct. 26.	To Cash received, three per cent. on $10,000 New York Central Railroad Bonds, less Tax . . .	$285.00	1867. Oct. 26.	By Cash paid to the Treasurer towards fitting up the cases in the conchological room, and for the services of E. S. Morse in arranging the collection of shells for scientific exhibition	$285.00
1868. April 30.	" " received, three per cent. on $10,000 New York Central Railroad Bonds, less Tax . . .	285.00	1868. April 30.	" " paid the Treasurer for above purposes	285.00
		$570.00			$570.00

Errors Excepted. Boston, April 30, 1868.

THOS. T. BOUVÉ,
CHAS. JAS. SPRAGUE,
E. PICKERING, } TRUSTEES.

April 30, 1868. The Property of this Fund consists on date of
10 New York Central Railroad Bonds, $1000 each, six per cent. $10,000.00

REPORT OF THE CUSTODIAN

OF THE

BOSTON SOCIETY OF NATURAL HISTORY,

EMBODYING THE REPORTS OF THE LIBRARIAN AND CURATORS

OF THE SEVERAL DEPARTMENTS,

FOR 1868–69.

In my last annual report I alluded to a topic which although not directly connected with the operations of the Society, seemed to demand its earnest attention. I refer to the refusal of the State Legislature to act upon the petition of the Society's Council for an extension of the proposed new edition of Dr Gould's Invertebrates of Massachusetts. Owing to the necessary and most fortunate delay in the publication of this work, an opportunity offered itself for a renewal of our plea, before a committee and a legislature more open to reasonable suggestions; and to-night I am happy to state that although the cost of the original edition was found to be largely in excess of the estimates, a Resolve was introduced into the House of Representatives on the twentieth of April last, both supplying the requisite deficiency, and authorizing an increased edition of eight hundred copies. Four hundred copies were to be given to this Society for distribution "to foreign public institutions of a similar nature,

by direction of its Council and in behalf of the State," and one hundred copies to the editor, Mr. Binney, "to be distributed among conchologists in this and foreign countries, in behalf of the State"; this resolve was referred to the Committee of Finance, who have, as yet, taken no formal action upon it; I am assured, however, that there is little doubt of their favorable report and of the final success of the measure.

The history of the past twelve months differs little from that of the preceding year. There have been twenty general meetings of the Society, ten of the Section of Entomology and six of the Section of Microscopy. At the general meetings the average attendance of members has been thirty-three, at those of the Section of Entomology nearly twelve, and at the Microscopical meetings nearly eight. This does not include ladies who attended nearly one half of the general meetings in response to a recent invitation of the Society. So few, however, availed themselves of the opportunity, that should they be included, the average attendance at the general meetings would only be increased to thirty-five. One hundred and five scientific communications have been presented by forty-nine persons, viz., sixty-seven communications by thirty-six persons at the general meetings; thirty-three communications by thirteen persons at the meetings of the Entomological Section, and five communications by three persons at those of the Microscopical Section. The following are their titles:—

ALLEN, J. A. Notes on Birds observed in Western Iowa, in the months of July, August and September; also on Birds observed in Northern Illinois, in May and June, and at Richmond, Wayne Co., Indiana, between June third and tenth. *June* 3, 1868.

Catalogue of the reptiles and batrachians found in the vicinity of Springfield, Mass., with notices of all the other species known to inhabit the State. *December* 2, 1868.

Appendix to a paper on the reptiles and batrachians of Massachusetts. *January* 20, 1869.

ATWOOD, CAPT. N. E. Observations upon the habits of the sperm whale. *June* 3, 1868.

Description of Carcharias tigris Atw. *January* 20, 1869.

Remarks upon the history of the halibut and other edible fish. *April* 7, 1869.

BICKMORE, A. S. Notice of some birds from the Island of Buru. *November* 18, 1868.

Remarks on the animal of Nautilus pompilius. *November* 18, 1868.

On a collection of shells of Nautilus of various ages. *December* 2. 1868.

Remarks on the Babirusa and its distribution. *December* 2, 1868.

BLAKE, W. P. Remarks upon the Ainos. *June* 17, 1868.

BREWER, DR. T. M. Remarks upon the death of Mr. John Cassin. *January* 20, 1869.

BRIGHAM, W. T. Notes on Hesperomannia, a new genus of Hawaiian Compositæ. (With illustrations.) *May* 6, 1868.

Notice of a new and remarkable eruption of Mauna Loa on the Hawaiian Islands. *June* 3, 1868.

Remarks upon Mr. N. S. Shaler's Considerations concerning the absence of distinct evidences of glacial action in the valley of the Yukon River, Alaska. *November* 4, 1868.

Remarks at the announcement of the death of Mr. Horace Mann. *November* 18, 1868.

On the results of Mr. Mann's study of the Hawaiian Flora. *November* 18, 1868.

The eruption of the Hawaiian Volcanoes, 1868. (With illustrations.) *December* 2, 1868.

Volcanic manifestations in New England. *April* 7, 1869.

BROWN, DR. F. H. Some observations on the fauna of Madeira. *December* 2, 1868.

BURGESS, E. On the habits of Anisomorpha buprestoides. *February* 24, 1869.

COLBY, DR. E. P. Note on the habits of Bryaxis luniger Lec. *November* 25, 1868.

COPE, E. D. On the Reptilian orders, Pythonomorpha and Streptosauria. *January* 20, 1869.

Descriptions of extinct fishes previously unknown. *February* 3, 1869.

COUES, DR. E. Synopsis of the Birds of S. Carolina. *October* 7, 1868.

CRESSON, E. T. Descriptions of North American Bees, No. I. *December* 2, 1868.

Descriptions of North American Bees, No. II. *January* 20, 1869.

Notes on Mexican Pompilidæ, with descriptions of new species. *March* 24, 1869.

DALL, W. H. Remarks upon the Natural History of Alaska. *November* 4, 1868.

DOLE, S. B. A synopsis of the Birds hitherto described from the Hawaiian Islands. *February* 3, 1869.

FROST, CHARLES C. A further enumeration of N. England Fungi. *May* 20, 1868.

GAFFIELD, T. On the accidental presence of water in glass stoppers. *March* 3, 1869.

GREENLEAF, R. C. Remarks on the double plate of Aulacodiscus oreganus. *March* 10, 1869.

List of Diatoms from Ashley River, S. Car. *March* 10, 1869.

HAGEN, DR. H. Rectification of a previous paper on Hodotermes japonicus. *October* 28, 1868.

Notice of an imago of Morpho Ilioneus with a caterpillar's head. *November* 25, 1868.

Upon the manufacture of microscopes. *March* 10, 1869.

On the diseases of injurious insects. *March* 24, 1869.

On the recent manufacture of cheap objectives for microscopes. *April* 14, 1869.

HILLS, LUTHER. Notice of a new locality for minerals, in Auburn, Me. *July* 1, 1868.

HOY, DR. G. R. On the nidification of Cooper's Hawk. *April* 7, 1869.

Notes on the Rough-winged Swallow and the Yellow-bellied Fly-catcher. *April* 21, 1869.

HYATT, A. Remarks upon Mr. Shaler's Considerations concerning the absence of distinct evidences of glacial action in the valley of the Yukon River, Alaska. *November* 4, 1868.

On the gradual involution of Cephalopods during life. *December* 2, 1868.

JACKSON, DR. C. T. Analysis of Petrosilex from Melrose. *June* 3, 1868.

Description of the beds of Apatite in North Burgess, Canada West. *June* 17, 1868.

Description of a new locality for tin ore in Winslow, Me. *January* 20, 1869.

JEFFRIES, DR. B. JOY. Remarks upon the discovery and structure of Euplectella speciosa. *May* 6, 1868.

Remarks upon the projection of after-pictures. *June* 3, 1868.

Upon the principle of the Thaumatrope. *July* 1, 1868.

Observations on the vision of Fishes and Amphibians. *December* 16, 1868.

Remarks upon experiments with after-images. *February* 17, 1869.

On the method of accommodation in the eyes of birds. *April* 21, 1869.

MCGUIER, HENRY. On the evidences of the antiquity of man, deduced from the excavations at High Rock Spring, Saratoga, N. Y. *April* 21, 1869.

MANN, B. P. On the preservation of larvæ in carbolic acid. *November* 25, 1868.

MANN, HORACE. Notes on Alsinidendron, Platydesma and Brighamia, new genera of Hawaiian Plants; with an analysis of the Hawaiian Flora. (With illustrations.) *December* 2, 1868.

MARSH, O. C. Observations on the metamorphosis of Siredon into Amblystoma. *September* 16, 1868.

MINOT, C. S. Notice of the broods of Chrysophanus americanus. *September* 23, 1868.

Description of the male of Hesperia Metea. *February* 24, 1869.

On the limits of genera. *March* 24, 1869.

Notice of some abnormal cocoons of Bombycidæ. *April* 28, 1869.

MOORE, N. B. Notes upon the habits of the Night Hawk in Lousiana. *October* 7, 1868.

MORSE, E. S. On the land-slides in the vicinity of Portland, Maine. (With illustrations.) *January* 6, 1869.

Remarks on the minuter classification of land snails. *February* 17, 1869.

NILES, W. H. Remarks on the occurrence of recent shells at a great depth below Fort Warren, Boston Harbor. *January* 6, 1869, *March* 17, 1869.

Ancient operations in the Petroleum Region of Pennsylvania. *March* 17, 1869.

PAPENDIEK, E. Notice of the occurrence of Silpha atrata in Milton, Mass. *March* 24, 1869.

PERRY, REV. J. B. Sketch of the life of the late Dr. E. Emmons. *December* 2, 1868.

Observations on some Indian Relics in Swanton, Vt. *December* 2, 1868.

POURTALES, L. F. DE. On some deep sea dredging between Cuba and the Florida Keys. *October* 7, 1868.

PUTNAM, F. W. On some ancient utensils from Nicaragua. *December* 2, 1868.

SANBORN, F. G. Description and history of a new species of Erirhinus, E. juniperinus. *May* 27, 1868.

Description of the larva and pupa case of Microdon globosus Fabr. (With illustrations.) *June* 24, 1868.

On the habits of Heterocerus fatuus Kiesenw. *June* 24, 1868.

Remarks on a number of interesting insects. *September* 22, 1868.

Intelligence in the larva of Elaphidion villosum. *January* 27, 1869.

Recent discovery of Boreus brumalis, in Mass. *April* 28, 1869.

SCHLAGINTWEIT R. VON. Remarks upon Nephrite from Turkistan. *October* 21, 1868.

SCUDDER, S. H. Brief account of the migratory grasshoppers of the United States. *June* 17, 1868.

Experiments upon the reproduction of lost limbs in the Walking Stick, Diapheromera femorata. *September* 23, 1868.

Notice of a Chalciditan, parasitic in the eggs of Œdipoda carolina. *September* 23, 1868.

A century of Orthoptera: Decade I, Gryllides. *October* 28, 1868.

Remarks upon Mr. Shaler's Considerations concerning the absence of distinct evidences of glacial action in the valley of the Yukon River, Alaska. *November* 4, 1868.

Remarks upon the arrangement of the families of Orthoptera. *December* 23, 1868.

Notes on Orthoptera collected by Prof. James Orton on either side of the Andes of equatorial South America. *February* 24, 1869.

A study of the gigantic lobe-crested Grasshoppers of Central and South America. *February* 24, 1869.

Report upon a collection of diurnal Lepidoptera, made in Alaska by the scientific corps of the Russo-American telegraph expedition, under the direction of Lieut. W. H. Dall. *April* 28, 1869.

Notice of a new cave insect from N. Zealand. *April* 28, 1869.

SHALER, N. S. On the nature of the movements involved in the changes of level of shore lines. (With illustrations.) *October* 7, 1868.

On the disappearance of the cane from the central part of the Ohio valley. *October* 7, 1868.

Considerations concerning the absence of distinct evidences of glacial action in the valley of the Yukon River, Alaska. *November* 4, 1868.

Notes on the concentric structure of granitic rocks. *February* 3, 1869.

SMITH, G. D. List of Coleoptera collected by Prof. James Orton in Ecuador and Brazil. *February* 24, 1869.

SMITH, S. I. Notes on new or little known species of American cancroid Crustacea. *February* 3, 1869.

STODDER, C. Remarks upon Dr. Woodward's photographs of Nobert's test plate. *November* 11, 1868.

SUMICHRAST, F. The geographical distribution of the native birds of the department of Vera Cruz, with a list of the migratory species, translated by Dr. T. M. Brewer. *December* 16, 1868.

TROUVELOT, L. Upon the comparative study of juvenile larvæ. *June* 24, 1868.

On an interesting habit of the larva of Papilio Turnus. *June* 24, 1868.

Notice of some points of analogy between Limacodes and some Hymenoptera. *June* 24, 1868.

UHLER, P. R. Notices of the Hemiptera obtained by the expedition of Prof. James Orton in Ecuador and Brazil. *February* 24, 1869.

VERRILL, A. E. On new and imperfectly known Echinoderms and Corals. *April* 7, 1869.

WHITNEY, C. P. Description of a new species of Thecla. *November* 25, 1868.

WHITTLESEY, COL. C. The physical geology of Eastern Ohio. (With illustrations.) *February* 3, 1869.

WYMAN, DR. J. On a thread worm (Filaria anhingæ) infesting the brain of the snake bird (Photus anhinga). (With illustrations.) *October* 7, 1868.

On the mode of formation of the Dighton Rock inscriptions. *December* 2, 1868.

Five corresponding and twenty-nine resident members have been elected during the year. Of the resident members six have not complied with the requirements of the Constitution, and their names are not placed on our rolls; two others who have paid the entrance fee have not yet signed the Constitution.

The Lectures given under the auspices of the Society are coming into more general notice, and are therefore better

attended. Three courses have been delivered during the winter and spring. The first course consisted of four lectures upon Optical Phenomena, by Dr. B. Joy Jeffries; the second of twelve lectures upon the Geological History of North America, by Mr. W. H. Niles, and the third of twelve lectures, several of which are yet to be given, upon Plant Life, by Mr. W. T. Brigham. The first course was but little advertised, and being also upon a limited subject, attracted but a slender audience; the second course was attended by an average of sixty-six persons; and the third, delivered in the evening, by an audience averaging thus far ninety-nine persons.

Perhaps the large amount of the Society's publications has been the most noticeable feature in the history of the past year. We have issued no less than the equivalent of one thousand two hundred and twenty-nine octavo pages, a number at least double that of any previous year of our history. It was announced in the last report that our publications, and especially the Proceedings, would appear with greater promptness than before; and we can say with just pride that no Society in this country can at all compete with us in this respect; during the greater part of the year,—and had it not been for one unforeseen and unavoidable strain upon our printing office, we should have said during the whole year,—we have placed upon the table at each meeting of the Society, a part, at least, of the printed Proceedings of the previous meeting; this has been scarcely more difficult, no more expensive, and to our subscribers and contributors in every way more satisfactory than the former deliberate method of issuing our publications. We are now placing a press in our printing office, so that, with the exception of stereotyping, all our future work will be done within our own walls, and with still greater promptness.

The twelfth volume of our Proceedings, begun a year ago,

has reached the four hundredth page, and includes the records of the last regular meeting, held a fortnight ago to-day. Early in the year we published the Annual Report and our first Annual, of one hundred and twenty-eight pages, with which you are all familiar; in the winter an outline Physical map of North America, to be used in indicating the boundaries of the geographical distribution of animals and plants; a large edition was printed, and copies are sold at cost to induce students to engage in a study which promises the best results. Recently we have issued two important works, the fourth and concluding part of the first volume of our Memoirs, and the first volume of our Occasional Papers; the former included papers by Col. Whittlesey, upon the weapons and military character of the ancient mound builders of the West, and upon the physical geology of Eastern Ohio; by Mr. Vose on the distortion of pebbles in conglomerates, mainly drawn from his studies near Rangeley Lake in Maine; by Mr. Allen upon the birds which he observed in Iowa, Illinois and Indiana; by Mr. Brigham upon Hesperomannia, and upon the recent eruption of the Hawaiian volcanoes; by the late Mr. Mann upon new genera of Hawaiian plants, with an analysis of the Hawaiian flora; and by Prof. Sumichrast upon the geographical distribution of the birds of Vera Cruz, in Mexico.

Our new octavo series, called "Occasional Papers," is introduced by a volume of the Entomological Correspondence of the late Dr. T. W. Harris, edited by the Secretary; the body of the work is made up of both sides of the correspondence between Dr. Harris and Prof. Hentz, Drs. Melsheimer, LeConte, Zimmermann and LeBaron, Miss Morris, and Messrs. Doubleday, Herrick, Say, Darling and Higginson. Numerous notes, principally upon the earlier stages of Insects, are added from Dr. Harris's MSS., and some articles which originally appeared in obscure and now inaccessible Journals, are republished. An interesting Memoir of the author is given by Col. Higginson, and a steel portrait from a photograph furnished

by the family is prefixed. The work is also embellished by steel plates and woodcuts.

We must again express our great indebtedness to the Smithsonian Institution for the liberality with which they transmit our publications from Washington to foreign countries, and receive returns for us through their European agents, free of charge. This system of interchange, initiated many years ago by the Smithsonian Institution, has proved of immense advantage to American Societies, not only in a monetary point of view, but in the simplicity of the method and the certainty of its results. It is, however, much to be desired that the transmission from this country could be made with greater frequency, not so much for our own sake as for that of our foreign correspondents; while parcels are forwarded to us at an average interval of three or four weeks, we do not send our own publications more than once a year; indeed many of our transactions do not reach our foreign friends until a year after their publication. This year our transmissions have been twice as large as usual, that for 1868 having been forwarded immediately after the Annual Meeting, and that for 1869 a few weeks ago. We have sent away 737 parts of our Memoirs, 312 parts of the old Journal, 254 complete volumes of the Proceedings, unbound sheets of the same equivalent to 367 volumes, 303 copies of the Harris Correspondence, 340 copies of the first Annual, and 597 copies of the Annual Reports, equal in all to three quarters of a million of octavo pages.

In response to our special requests, we have been favored by the following Societies, with many early volumes of their Publications:—

Naturhistorischer Verein des Preussischen Rheinlandes	Bonn.
Société Linnéenne	Bordeaux.
Schlesische Gesellschaft für vaterländische Cultur .	Breslau.
* Physiographiske Forening	Christiania.
* Royal Physical Society	Edinburgh.

Naturforschende Gesellschaft	Freiburg i. B.
" "	Görlitz.
Naturhistorische "	Hannover.
Finska Vetenskaps-Societeten	Helsingfors.
* Provinciaal Genootschap van Kunsten en Wetenschappen	Hertogenbosch.
Geological and Polytechnic Society of the West Riding of Yorkshire	Leeds.
* Zeitschrift für wissenschaftliche Zoologie	Leipzig.
Academia Lugduno-Batava	Leyden.
* Société Impériale des Sciences, de l'Agriculture et des Arts	Lille.
Royal Geographical Society	London.
* The Zoölogist	"
Königliche Realschule	Meseritz.
* Société Impériale d'Agriculture	Moscou.
" " des Naturalistes	"
Die Pollichia: naturwissenschaftlicher Verein der Rheinpfalz	Neustadt.
* Ministère de la Marine	Paris.
* Muséum d'Histoire Naturelle	"
Société des Antiquaires de France	"
" Géologique de France	"
* " Impériale et Centrale d'Agriculture	"
* Universidad de Chile	Santiago.
K. K. Zoologisch-botanische Gesellschaft	Wien.

Of these we must particularly express our thanks to the Imperial Society of Antiquaries, the Minister of the Marine, the Imperial Society of Agriculture, the Geological Society and the Museum of Natural History,—all of Paris, the University of Chili, the Leyden Academy, the new Magazine of Natural History at Christiania, the Provincial Society of Science and Arts in North Brabant, and the Imperial Society of Science, etc., of Lille; they have favored us with extensive series of great importance.

The following institutions, in addition to those prefixed by an asterisk in the list above, have been added to our circle of correspondents.

State Agricultural Society	Albany.
Ministère de l'Intérieur du Royaume des Pays-Bas	Amsterdam.
Natural History and Philosophical Society	Belfast.
Cambridge Philosophical Society	Cambridge, Eng.
Naturwissenschaftliche Gesellschaft	Chemnitz.

Oekonomische Gesellschaft im Königreich Sachsen	Dresden.
Botanical Society	Edinburgh.
Società Entomologica Italiana	Firenze.
Deutsche Malakozoologische Gesellschaft	Frankfurt a. M.
Universität	Kiel.
Historic Society of Lancashire and Cheshire	Liverpool.
Geological Magazine	London.
Journal of Travel and Natural History	"
Scientific Opinion	"
Scientific Students' Association	Manchester.
Naturhistorischer Verein von Wisconsin	Milwaukee.
Reale Istituto d'Incoraggiamento alle Scienze Naturali	Napoli.
American Agriculturist	New York.
Revue et Magazin de Zoologie	Paris.
Société des Antiquaires	"
Lotos: Zeitschrift für Naturwissenschaften	Prag.
Le Naturaliste Canadien	Quebec.
American Entomologist	St. Louis.
Allgemeine Schweizerische Gesellschaft für die gesammten Naturwissenschaften	Switzerland.
Canadian Entomologist	Toronto.

The accompanying table gives a summary of the additions to the Library by volumes, parts of volumes, pamphlets and maps or charts.

	Octavo.			Quarto.			Folio.			Maps and Ch'ts	To'l
	vls	pts	ph	vls	pts	ph	vls	pts	ph		
Books presented by individuals	101	63	156	22		3	4	3		58	410
" " " Publishing Com.	1	35	10		1	6				1	54
" purchased (Wolcott Fund)	18	1		3	3	2		5			32
" deposited in Binney library				2	2						4
" " by the Republican Institution	6										6
" received in exchange	300	551	103	86	189	41	10	42	1	2	1325
Total	426	650	269	113	195	52	14	50	1	61	1831

The arrangement of the books in the back library, not completed at the time of the last report, was finished shortly after; since then the alcove catalogue of the whole library has been completed, while the correction of the card catalogue,

necessitated by the almost entire rearrangement of the books on furnishing the new library, is advancing as rapidly as possible. The constant employment of a binder in the building has wrought a most agreeable change in the appearance of our shelves. Six hundred and seventy-seven books have been bound, and more than five hundred volumes are at this time in various stages of completion. But the work of the binder has not been limited to the library, for besides the folding of the signatures of our Proceedings and of extras issued to authors, six hundred copies of the Harris Correspondence, and over four hundred volumes of the Proceedings have been bound in cloth, and more than four hundred numbers of the Journal stitched. The binder has also been employed in some outside work, for which the Society charges but a slight advance upon the cost, and which is permitted by the Council in order to lessen the immediate expense incurred. The work of the library assistants has been greatly increased, by the necessary preparation of so many books for the binder, and as their time has also been partly occupied by the Curators, much work still remains unfinished; notwithstanding the continual employment of a second assistant, the mass of pamphlets still remains inaccessible; all new pamphlets, however, have been catalogued as soon as received, and perhaps one tenth of the old ones are now upon the shelves.

636 books have been borrowed from the library by 82 persons.

In connection with the Smithsonian Institution, the Society has continued to carry on explorations in Central America. Since Col. Grayson's return from the island of Socorro, he has been investigating the natural history of the Sierra Madre, but no returns are expected for several months to come. Col. Grayson's account of his expedition to Socorro and the Tres Marias, sent to us for publication, has been revised and partly annotated by Prof. Baird, but still remains in his hands, awaiting the result of additional excursions on the

main land, that the peculiar fauna of that region may be more fairly represented. In consequence, none of the birds obtained by Col. Grayson have yet been distributed, but a fine collection from Costa Rica, identified by Mr. Lawrence, and kindly presented to us by Professor Henry, is an earnest of what we may expect from time to time; indeed, our collection of birds bids fair to exhibit in the course of a few years a more complete representation of the fauna of Northwest Mexico and the adjacent islands, than can be found outside of the Museum of the Smithsonian Institution.

We have also contributed toward an exploration of the isthmus of Tehuantepec from ocean to ocean, carried on through the patronage of the Smithsonian Institution by Prof. Sumichrast, a most assiduous and scientific collector. It will probably continue for one or two years, and a few returns have already been received and distributed to various parties for identification. The expedition promises to be very successful.

For several months we have been employing one of our members, Mr. W. H. Dall, to select specimens from the Smithsonian duplicates, partly in return for the contribution we made toward their Explorations, partly as a direct gift from the Institution. We have already received many fossils and mollusks, and are daily expecting a large collection of the nests and eggs of birds.

By the favor of the Mayor and Chief of Police, two officers are detailed on museum days to protect our collections and preserve order; they render most efficient aid, without which we think it would be impossible to maintain our practice of opening the museum twice a week.

There have been more than 36,000 visitors to the Museum during the year, but it has been impossible to keep an accurate record; the enumeration has often been a partial one and at times estimates had to take the place of more careful counting. The Museum has been open to the public 104

days; on Thursdays, by ticket, 52 days; the average attendance on public days has been at least 336.

In the department of Mammals and Comparative Anatomy a very desirable step has been taken, authorizing the Curator to obtain mounted specimens of all our New England mammals; to make room for them the Ethnological collections will be removed. For several months the department was left without a curator, but lately the objects have been placed in better order, and recently acquired specimens put on exhibition. The principal additions have been a black bear and an antelope, both in a fresh condition, one received from Mr. W. T. Adams, and the other from the City, through Mr. J. Galvin.

The collection of mounted birds has been rearranged so as to bring it into more convenient view, and a case for skins completed, which will enable the Curator to arrange the unmounted birds more safely than has heretofore been possible. In accordance with the request made in last year's report, the collection of land birds of Massachusetts has been enriched by a number of specimens, and especially by a donation of twenty-five birds from Mr. L. L. Thaxter of Newton. Mrs. Bryant has again laid the department under obligation for a valuable and extensive collection of unmounted birds from the West Indies and Central and South America, and Prof. Henry of the Smithsonian Institution has presented eighty specimens of Costa Rican birds, all of which have been labelled by Mr. Lawrence.

The department of the nests and eggs of birds has been entirely rearranged and newly labelled, and is now in a very satisfactory condition. In round numbers the collection consists of the eggs of seven hundred birds, viz:—four hundred American, two hundred European, and one hundred from various parts of the world; about one hundred and fifty of the whole number are accompanied by nests; this estimate includes a

collection of European eggs which the Curator purposes to present as soon as he can select them. Other important accessions have been received. Over fifteen hundred duplicates of eggs of about fifty species, most valuable for exchange, were given by Mrs. Bryant, and about two hundred and fifty nests and eggs selected by the Curator, were presented by the Smithsonian Institution. About thirty specimens from Europe have been received in exchange, and a small number of nests and eggs purchased.

The following list of the nests and eggs of birds in our collection has been prepared by the Curator, with the assistance of Mr. Sanborn; any not specified would be acceptable additions to this department; they are all the gift of the late Dr. Henry Bryant, excepting those prefixed by an asterisk; *n.* following the name of the bird signifies that the nest alone is in the collection; *n. e.* signifies nest and eggs; in all other cases the eggs only are meant.

BIRDS OF NORTH AMERICA NORTH OF MEXICO.

Cathartes aura Illig.
Cathartes atratus Lesson.
Falco anatum Bonaparte.
Hypotriorchis columbarius Gr.
Falco candicans Gmelin.
Falco islandicus Sabine.
Tinnunculus sparverius Vieill.
Astur atricapillus Bonap.
Accipiter Cooperii Bonap.
Accipiter fuscus Bonap.
* Buteo calurus Cassin.
Buteo borealis Vieill.
Buteo montanus Nuttall.
Buteo lineatus Jardine.
Archibuteo lagopus Gray.
Archibuteo ferrugineus Gray.
Elanus leucurus Bonap.
Ictinia mississippiensis Gray.
Circus hudsonius Vieillot.
* Aquila canadensis Cassin.
Haliaetus leucocephalus Savigny.
Pandion carolinensis Bon.
Polyborus tharus Cassin.
Craxirex unicinctus Cassin.
Bubo virginianus Bonap.
Scops asio Bonap.
Otus Wilsonianus Lesson.
Brachyotus Cassinii Brewer.
* Syrnium nebulosum Gray.
Crotophaga ani Linn.
Geococcyx californianus Baird.
Coccygus americanus Bonap. n. e.
Coccygus erythrophthalmus Bonap.
Picus villosus Linn.
Picus pubescens Linn.
Picoides arcticus Gray.
Sphyropicus varius Baird.
Centurus carolinus Bonap.
Centurus flaviventris Sw.
Melanerpes erythrocephalus Sw.
* Melanerpes formicivorus Bonap.
Melanerpes torquatus Bonap.

Colaptes auratus Swainson.
Colaptes mexicanus Swains.
* Lampornis mango Swains. n.
Trochilus colubris Linn. n. e.
Atthis Anna Reichenb. n. e.
Chætura pelasgia Steph. n. e.
Antrostomus carolinensis Gould.
Antrostomus vociferus Bonap.
Antrostomus Nuttalli Cassin.
Chordeiles popetue Baird.
Chordeiles Henryi Cassin.
Chordeiles texensis Lawrence.
Ceryle alcyon Boie.
Milvulus forficatus Sw. n. e.
Tyrannus carolinensis Baird. n. e.
Tyrannus dominicensis Rich.
Tyrannus verticalis Say. n. e.
Tyrannus vociferans Sw. n. e.
Myiarchus crinitus Cab.
Myiarchus mexicanus Baird. n. e.
Sayornis nigricans Bonap. n. e
Sayornis fuscus Baird. n. e.
* Sayornis Sayus Baird. n.
* Contopus Richardsonii Baird. n.
Contopus virens Cab. n. e.
Empidonax Traillii Baird. n. e.
* Empidonax pusillus Cab. n. e.
Empidonax minimus Baird. n. e.
* Empidonax acadicus Baird. n. e.
Empidonax flaviventris Baird.
* Empidonax difficilis Baird. n. e.
Pyrocephalus mexicanus Sclat.
Turdus mustelinus Gm. n. e.
Turdus Pallasi Cab.
Turdus fuscescens Stephens. n. e.
Turdus ustulatus Nuttall. n. e.
Turdus Swainsonii Cab. n. e.
Turdus Aliciæ Baird. n. e.
Turdus migratorius Linn. n. e.
* Saxicola œnanthe Bechst.
Sialia sialis Baird. n. e.
Sialia mexicana Swains. n. e.
Anthus ludovicianus Licht.
Mniotilta varia Vieill. n.
Parula americana Bonap.
Geothlypis trichas Cab. n. e.
* Geothlypis Macgillivrayi Baird. n.
Icteria viridis Bonap. n. e.
Icteria longicauda Lawr. n. e.
Helminthophaga chrysoptera B. n. e.
Helminthophaga ruficapilla Bd. n. e.
Helminthophaga celata Baird. n. e.
Helminthophaga peregrina Cab.
Seiurus aurocapillus Sw. n. e.
Seiurus noveboracensis Nutt. n. e.
* Seiurus ludovicianus Bonap. n. e.
Dendroica virens Baird. n. e.
Dendroica coronata Gray. n. e.
Dendroica Blackburniæ Baird.
Dendroica castanea Baird.
* Dendroica pinus Baird. n. e.
Dendroica pennsylvanica Baird. n. e.
Dendroica striata Baird. n. e.
Dendroica æstiva Baird. n. e.
Dendroica maculosa Baird. n. e.
* Dendroica discolor Baird. n. e.
Myiodioctes mitratus Aud.
Setophaga ruticilla Sw. n. e.
Pyranga rubra Vieill.
Pyranga æstiva Vieill.
Hirundo horreorum Barton. n. e.
Hirundo lunifrons Say.
Hirundo bicolor Vieill.
Cotyle riparia Boie. n. e.
Cotyle serripennis Bonap.
Progne purpurea Boie.
Ampelis garrulus Binn.
Ampelis cedrorum Baird. n. e.
Collyrio ludovicianus Baird.
Collyrio excubitoroides Baird. n. e.
Vireo olivaceus Vieill.
Vireo altiloquus Gray. n. e.
Vireo gilvus Bonap.
Vireo Belli Aud. n. e.
Vireo noveboracensis Bonap. n. e.
* Vireo solitarius Vieill.
Vireo flavifrons Vieill. n. e.
Mimus polyglottus Boie.
Mimus carolinensis Gray. n. e.
Oreoscoptes montanus Baird.
Harporhynchus redivivus Cab. n. e.
Harporhynchus cinereus Xantus.
Harporhynchus curvirostris Cab.
Harporhynchus longirostris Cab.

Harporhynchus rufus Cab.
Campylorhynchus brunneicapillus Gray. n. e.
* Campylorhynchus affinis Xantus. n.e.
Thryothorus ludovicianus Bonap. n. e.
Cistothorus palustris Cab.
Cistothorus stellaris Cab. n. e.
Troglodytes ædon Vieill. n. e.
Troglodytes Parkmanni Aud.
Sitta carolinensis Gmelin.
* Sitta pygmæa Vigors. n.
Polioptila cærulea Sclat. n. e.
Parus atricapillus Linn.
Parus carolinensis Aud.
Psaltriparus minimus Bonap. n. e.
Paroides flaviceps Baird. n. e.
Certhiola flaveola Sund. n. e.
Eremophila cornuta Boie.
Carpodacus purpureus Gray. n. e.
Carpodacus frontalis Gray. n. e.
Chrysomitris tristis Bonap. n. e.
Chrysomitris psaltria Bonap. n. e.
Chrysomitris Lawrencii Bonap. n. e.
Ægiothus linaria Cab.
Ægiothus fuscescens Coues. n. e.
Plectrophanes lapponicus Selby. n. e.
Plectrophanes pictus Sw. n. e.
* Plectrophanes ornatus Towns. n. e.
Plectrophanes Maccownii Lawr.
Passerculus savanna Bonap. n. e.
Passerculus anthinus Bonap.
Passerculus alaudinus Bonap. n. e.
Pooecetes gramineus Baird. n.
* Coturniculus passerinus Bonap. n. e.
Coturniculus Henslowi Bonap.
Ammodromus caudacutus Sw.
Ammodromus maritimus Sw.
Chondestes grammaca Bonap. n. e.
Zonotrichia leucophrys Sw.
Zonotrichia Gambelii Nutt. n. e.
Zonotrichia albicollis Bonap. n. e.
* Junco oregonus Sclat. n. e.
Junco hyemalis Sclat. n. e.
* Poospiza bilineata Sclat. n. e.
Spizella monticola Baird. n. e.
Spizella pusilla Bonap. n. e.
Spizella socialis Bonap. n. e.
Spizella pallida Bonap. n. e.
* Spizella Breweri Cass. n. e.
Melospiza melodia Baird. n. e.
Melospiza Lincolnii Baird.
Melospiza palustris Baird.
Peucæa æstivalis Cab.
Peucæa Cassinii Baird.
Passerella iliaca Sw.
Calamospiza bicolor Bonap.
Euspiza americana Bonap. n. e.
Guiraca ludoviciana Sw. n. e.
Guiraca melanocephala Sw. n. e.
* Guiraca cærulea Sw. n. e.
Cyanospiza ciris Baird. n. e.
Cyanospiza amœna Baird. n. e
Cyanospiza cyanea Baird.
Pyrrhuloxia sinuata Bonap.
Cardinalis virginianus Bonap. n. e.
Cardinalis igneus Baird.
Pipilo erythrophthalmus Vieill. n. e.
Pipilo fuscus Sw. n. e.
* Pipilo chlorura Baird. n. e.
* Pipilo albigula Baird. n. e.
Dolichonyx oryzivorus Sw. n. e.
Molothrus pecoris Sw.
Agelaius phœniceus Vieill. n. e.
Agelaius gubernator Bonap.
Xanthocephalus icterocephalus Bd. n. e.
Trupialis militaris Bonap.
Sturnella magna Sw.
Sturnella neglecta Aud.
Icterus Audubonii Giraud.
Icterus parisorum Bonap.
Icterus cucullatus Swains.
Icterus spurius Bonap. n. e.
Icterus baltimore Daudin. n. e.
Icterus Bullockii Bonap. n. e.
Scolecophagus ferrugineus Sw. n. e.
Scolecophagus cyanocephalus Cab. n. e.
Quiscalus macroura Sw.
Quiscalus major Vieill.
Quiscalus versicolor Vieill. n. e.
Corvus carnivorus Bartram.
Corvus cryptoleucus Couch.
Corvus americanus Aud.

Corvus ossifragus Wilson.
Pica hudsonica Bonap.
Cyanura cristata Sw. n. e.
Cyanocitta californica Strick.
Cyanocitta floridana Bonap.
Columba leucocephala Linn.
Ectopistes migratoria Sw.
Zenaida amabilis Bonap.
Melopelia leucoptera Bonap.
Zenaidura carolinensis Bonap.
Scardafella squamosa Bonap. n. e.
Chamæpelia passerina Sw.
Oreopeleia martinica Reich.
Ortalida M'c Calli Baird.
Meleagris gallopavo Linn.
Meleagris mexicana Gould.
Tetrao obscurus Say.
Tetrao canadensis Linn.
Centrocercus urophasianus Sw.
Pediœcetes phasianellus Baird.
Cupidonia cupido Baird.
Bonasa umbellus Steph.
Lagopus albus Aud.
Lagopus Reinhardtii.
Ortyx virginianus Bonap.
Ortyx texanus Lawr.
Oreortyx pictus Baird.
Lophortyx californicus Bonap.
Cyrtonyx massena Gould.
Grus canadensis Temm.
Demiegretta Pealii Baird.
Demiegretta rufa Baird.
Demiegretta ludoviciana Baird.
Garzetta candidissima Bonap.
Herodias egretta Gray.
Herodias californica Baird.
Ardea herodias Linn.
Audubonia occidentalis Bonap.
Florida cærulea Baird.
Ardetta exilis Gray.
Botaurus lentiginosus Steph.
Butorides virescens Bonap.
Nyctiardea gardeni Baird.
Nyctherodius violaceus Reich.
Tantalus loculator Linn.
Ibis alba Vieillot.
Ibis Ordii Bonaparte.
Platalea ajaja Linn.
Phœnicopterus ruber Linn.
Charadrius virginicus Borck.
Ægialitis vociferus Cassin.
Ægialitis Wilsonius Cassin.
Ægialitis semipalmatus Cab.
Ægialitis melodus Cab.
* Squatarola helvetica Cuv.
Haematopus palliatus Temm.
* Strepsilas melanocephala Vig.
Recurvirostra americana Gm.
Himantopus nigricollis Vieillot.
Phalaropus Wilsonii Sab.
Phalaropus hyperboreus Temm.
* Phalaropus fulicarius Bonap.
Philohela minor Gray.
Gallinago Wilsonii Bonap.
* Macrorhamphus griseus Leach.
Tringa maritima Brünnich.
* Tringa Wilsonii Nuttall.
Ereunetes petrificatus Ill.
Symphemia semipalmata Hartl.
Gambetta flavipes Bonap.
* Rhyacophilus solitarius Bonap.
Tringoides macularius Gray.
* Philomachus pugnax Gray.
Actiturus bartramius Bonap.
* Tryngites rufescens Cab.
Limosa hudsonica Sw.
Numenius longirostris Wils.
* Numenius hudsonicus Latham.
* Numenius borealis Latham.
Rallus elegans Aud.
Rallus crepitans Gm.
Rallus virginianus Linn. n. e.
Porzana carolina Vieill.
Crex pratensis Bechst.
Fulica americana Gmelin.
Gallinula galeata Bonap.
Gallinula martinica Lath.
Cygnus americanus Sharpless.
* Cygnus buccinator Rich.
* Anser hyperboreus Pallas.
Anser Gambelii Hartlaub.
Bernicla canadensis Bote.
* Berniola Hutchinsii Bonap.
* Bernicla nigricans Cassin.

* Chloephaga canagica Bonap.
Dendrocygna autumnalis Eyton.
Anas boschas Linn.
Anas obscura Gm.
Dafila acuta Jenyns.
Nettion carolinensis Baird.
Nettion crecca Kaup.
Querquedula discors Steph.
Querquedula cyanopterus Cassin.
Spatula clypeata Boie.
Chaulelasmus streperus Gray.
Mareca americana Stephens.
Mareca Penelope Bonap.
Aix sponsa Boie.
Fulix marila Baird.
Fulix affinis Baird.
* Fulix collaris Baird.
Aythya americana Bonap.
Aythya vallisneria Bonap.
Bucephala americana Baird.
* Bucephala albeola Baird.
Harelda glacialis Leach.
* Lampronetta Fischeri Brandt.
Melanetta velvetina Baird.
Pelionetta perspicillata Kaup.
Somateria mollissima Leach. n. e.
* Somateria v-nigra Gray.
* Somateria spectabilis Leach.
Erismatura rubida Bonap.
Mergus americanus Cass.
Mergus serrator Linn.
Lophodytes cucullatus Reich.
* Pelecanus erythrorhynchus Gm.
Pelecanus fuscus Linn.
Sula bassana Briss.
Sula fiber Linn.
Tachypetes aquila Vieillot.
Graculus carbo Gray.
Graculus dilophus Gray.
Graculus floridanus Bonap.
Graculus penicillatus Bonap.
Graculus violaceus Gray.
Plotus anhinga Linn.
Phaeton flavirostris Brandt.
* Procellaria glacialis Linn.
* Thalassidroma furcata Gould.
Thalassidroma Leachii Temm.
* Thalassidroma pelagica Bonap.
* Puffinus anglorum Temm.
Puffinus obscurus Lath.
Stercorarius parasiticus Temm.
Stercorarius cepphus Ross.
Larus glaucus Brünn.
Larus glaucescens Licht.
Larus leucopterus Faber.
Larus marinus Linn.
Larus argentatus Brünn.
Larus occidentalis Aud.
Larus californicus Lawr.
Larus delawarensis Ord.
Larus brachyrhynchus Rich.
Chroicocephalus atricilla Linn.
Chroicocephalus Franklinii Br.
Chroicocephalus philadelphia Lawr.
Rissa tridactyla Bonap.
* Xema Sabinii Bonap.
Sterna aranea Wils.
Sterna regia Gambel.
Sterna acuflavida Cabot.
Sterna fuliginosa Gm.
Sterna Wilsoni Bonap.
Sterna macroura Naum.
Sterna Forsteri Nutt.
Sterna paradisea Brünn.
Sterna frenata Gambel.
Hydrochelidon plumbea Wils.
Anous stolidus Leach.
Rhynchops nigra Linn.
Colymbus torquatus Brünn.
Colymbus arcticus Linn.
Colymbus pacificus Lawr.
Colymbus septentrionalis Linn.
Podiceps griseigena Gray.
Podiceps occidentalis Lawr.
Podiceps cornutus Latham.
Podiceps californicus Heermann.
Podilymbus podiceps Lawr.
Alca torda Linn.
Mormon cirrhata Bonap.
Mormon arctica Illiger.
Cerorhina monocerata Cassin.
Uria grylle Latham.
Uria columba Cassin.
Uria carbo Brandt.

Uria lomvia Brünnich.
Uria ringvia Brünnich.
Uria arra Pallas.

BIRDS OF EUROPE.

* Haliætus albicilla Leach.
* Buteo vulgaris Bechst.
* Archibuteo lagopus Brehm.
* Pernis apivorus Bonap.
* Milvus regalis Briss.
* Milvus niger Briss.
* Falco lithofalco Gmel.
* Falco tinnunculus Linn.
* Falco cenchris Naum.
* Astur palumbarius Bechst.
* Accipiter nisus Pall.
* Circus æruginosus Savigr.
* Circus cyaneus Boie.
* Circus cineraceus Naum.
* Syrnium aluco Brehm.
* Strix flammea Linn.
* Otus vulgaris Flemm.
* Scops Aldrovandi Willughb.
* Picus major Linn.
* Picus medius Linn.
* Gecinus viridis Boie.
* Gecinus canus Boie.
* Yunx torquilla Linn.
* Cuculus canorus Linn.
Coracias garrula Linn.
* Merops apiaster Linn.
* Alcedo ispida Linn.
* Sitta europæa Linn.
* Certhia familiaris Linn.
* Upupa epops Linn.
* Corvus corax Linn.
* Corvus corone Linn.
* Corvus cornix Linn.
* Corvus frugilegus Linn.
* Corvus monedula Linn.
* Pyrrhocorax alpinus Vieill.
* Pica caudata Linn.
* Pica cyanea Wagl.
* Garrulus glandarius Vieill.
* Lanius minor Gmel.
* Lanius rufus Briss.
* Lanius collurio Linn.
* Sturnus vulgaris Linn.
* Passer domesticus Briss.
* Passer hispaniolensis Degl.
* Passer montanus Briss.
* Pyrrhula vulgaris Temm.
* Coccothraustes vulgaris Vieill.
* Ligurinus chloris Koch.
* Fringilla cælebs Linn.
* Montifringilla nivalis Brehm.
* Carduelis elegans Steph.
* Chrysomitris spinus Boie.
* Serinus meridionalis Bonap.
* Cannabina linota G. R. Gray.
* Cannabina flavirostris Brehm.
* Linaria borealis Vieill.
* Linaria rufescens Vieill.
* Miliaria europæa Swains.
* Emberiza citrinella Linn.
* Emberiza cia Linn.
* Emberiza hortulana Linn.
* Cynchramus schœniclus Boie.
* Plectrophanes lapponicus Selby.
* Alauda arvensis Linn.
* Alauda arborea Linn.
* Otocoris alpestris Bonap.
* Melanocorypha calandra Boie.
* Galerida cristata Boie.
* Agrodroma campestris Swains.
* Anthus arboreus Bechst.
* Anthus pratensis Bechst.
* Anthus spinoletta Bonap.
* Anthus obscurus Keys. et Blas.
* Budytes flava Bonap.
* Motacilla alba Linn.
* Motacilla Yarrellii Gould.
* Oriolus galbula Linn.
* Turdus merula Linn.
* Turdus torquatus Linn.
* Turdus pilaris Linn.
* Turdus viscivorus Linn.

* Turdus musicus Linn.
* Rubecula familiaris Blyth.
* Philomela luscinia Selby.
* Cyanecula suecica Brehm.
* Ruticilla phœnicura Bonap.
* Ruticilla tithys Brehm.
* Saxicola œnanthe Bechst.
* Pratincola rubetra Koch.
* Pratincola rubicola Koch.
* Prunella modularis Vieill.
* Sylvia atricapilla Scop.
* Sylvia hortensis Lath.
* Curruca garrula Briss.
* Curruca orphea Boie.
* Curruca cinerea Briss.
* Curruca melanocephala Boie.
* Hypolais icterina Z. Gerbe.
* Hypolais olivetorum Z. Gerbe.
* Hypolais elæica Z. Gerbe.
* Calamoherpe turdoides Boie.
* Calamoherpe arundinacea Boie.
* Calamoherpe palustris Boie.
* Locustella naevia Degl. n.
* Calamodyta phragmitis Mey et Wolf.
* Troglodytes parvulus Koch.
* Phyllopneuste trochilus Brehm.
* Phyllopneuste rufa Bonap.
* Phyllopneuste sibilatrix Brehm.
* Regulus cristatus Charlet.
* Regulus ignicapillus Licht.
* Parus major Linn.
* Parus ater Linn.
* Parus cæruleus Linn.
* Orites caudatus G. R. Gray.
* Panurus biarmicus Koch.
* Muscicapa nigra Briss.
* Butalis grisola Boie.
* Hirundo rustica Linn.
* Chelidon urbica Boie.
* Cotyle riparia Boie.
* Cypselus apus Ill.
* Cypselus melba Ill.
* Caprimulgus europæus Linn.
* Columba palumbus Linn.
* Columba œnas Linn.
* Columba livia Briss.
* Turtur auritus Ray.
* Lagopus scoticus Bonap.
* Lagopus mutus Leach.
* Tetrao urogallus Linn.
* Tetrao tetrix Linn.
* Perdix græca Briss.
* Perdix rubra Briss.
* Perdix petrosa Lath.
* Starna cinerea Bonap.
* Coturnix communis Bonnatt.
* Phasianus colchicus Linn.
* Otis tetrax Linn.
* Glareola pratincola Leach.
* Œdicnemus crepitans Temm.
* Pluvialis apricarius Bonap.
  Charadrius hiaticula Linn.
* Vanellus cristatus Meyer et Wolf.
* Hæmatopus ostralegus Linn.
* Numenius arquata Lath.
* Limosa ægocephala Leach.
* Scolopax rusticula Linn.
* Gallinago scolopacinus Bonap.
* Tringa maritima Brünn.
* Pelidna cinclus Bonap.
* Machetes pugnax G. Cuv.
* Totanus calidris Bechst.
* Totanus glareola Temm.
* Actitis hypoleucos Boie.
* Phalaropus fulicarius Bonap.
* Lobipes hyperboreus Steph.
* Recurvirostra avocetta Linn.
* Himantopus candidus Bonnatt.
* Rallus aquaticus Linn.
* Crex pratensis Bechst.
* Porzana maruetta G. R. Gray.
* Gallinula chloropus Lath.
* Fulica atra Linn.
* Ardea cinerea Linn.
* Ardea purpurea Linn.
* Egretta garzetta Bonap.
* Bubulcus ibis Bonap.
* Buphus comatus Boie.
* Ardeola minuta Bonap.
* Botaurus stellaris Steph.
* Nycticorax europæus Steph.
* Ciconia alba Willughb.

* Ciconia nigra Gesn.
* Phatalea leucorhodia Linn.
* Sula bassana Briss.
Phalacrocorax carbo Leach.
* Phalacrocorax cristatus Steph.
* Phalacrocorax pygmæus Dum.
* Procellaria glacialis Linn.
* Puffinus anglorum Boie.
Puffinus obscurus Boie.
* Thalassidroma pelagica Selby.
* Thalassidroma Bulweri Bonap.
* Stercorarius catarractes Vieill.
* Stercorarius pomarinus Vieill.
* Stercorarius parasiticus G. R. Gray.
Larus glaucus Brünn.
Larus leucopterus Ferber.
Larus marinus Linn.
* Larus fuscus Linn.
Larus argentatus Brünn.
* Larus canus Linn.
Larus tridactylus Linn.
* Larus ridibundus Linn.
* Sterna cantiaca Gmel.
* Sterna hirundo Linn.
* Sterna paradisea Brünn.
* Sterna minuta Linn.
* Hydrochelidon fissipes G. R. Gray.
* Hydrochelidon nigra G. R. Gray.
* Cygnus ferus Ray.
* Anser cinereus Meyer.
* Anser sylvestris Briss.
* Tadorna Belonii Ray.
* Anser erythropus Newton.
* Spatula clypeata Boie
* Anas boschas Linn.
* Chaulelasmus strepera G. R. Gray.
* Mareca penelope Selby.
* Dafila acuta Eyton.
* Querquedula crecca Steph.
* Clangula islandica Bonap.
Harelda glacialis Steph.
* Somateria mollissima Boie.
Oidemia nigra Flem.
Oidemia fusca Flem.
* Mergus merganser Linn.
* Mergus serrator Linn.
* Podiceps cristatus Lath.
* Podiceps fluviatilis Degl.
* Uria troile Lath.
Uria ringvia Brünn.
Uria arra Keys. et Blas.
Uria grylle Lath.
* Uria Mandtii Lichst.
* Mergulus alle Vieill.
* Fratercula arctica Vieill.
* Fratercula corniculata Brandt.
Alca torda Linn.

BIRDS OF JAMAICA.

Crotophaga ani Linn.
Tyrannus griseus Vieill.
Tyrannus caudifasciatus D'Orbign.
Myiarchus validus Cab.
Myiarchus stolidus Gosse.
* Dendroica petechia Sclat. n.
* Petrochelidon fulva Cab.
* Progne dominicensis March.
* Tachornis phœnicobia Gosse. n.
* Vireo modestus Baird.
* Vireo altiloquus Gray. n.
* Mimus orpheus Baird. n.
Phonipara Marchii Baird.
Loxigilla anoxantha Sclat.
Loxigilla violacea Sclat.
* Certhiola flaveola Sund.
* Coturniculus tixicrus Gosse. n.
* Icterus leucopteryx Wagl. n.
Quiscalus crassirostris Swains. n.
* Columba leucocephala Linn.
Zenaida amabilis Bonap.
* Melopelia leucoptera Linn.
Chamæpelia passerina Swains.
Ortyx virginianus Bon.

BIRDS OF MEXICO AND LOWER CALIFORNIA.

* Pitangus Derbianus Sclat. n.
* Turdus Grayi Bonap. n.
* Campylorhynchus affinis Xantus. n.
* Cardinalis igneus Baird. n.

* Volatinia jacarina Cab.
* Harporhynchus cinereus Xantus. n.
* Zonotrichia melanotis. n.
* Cyanospiza Leclancheri. n.
* Spermophila torqueola Sclat.
* Icterus pustulatus Wagl. n.
* Cassiculus melanicteris Swains. n.
* Pipilo albigula Baird. n.
* Todirostrum sp. indet. Tabaxo. n.

TROCHILIDÆ.

Ramphodon nævius Cab. & Hein. n.
Glaucis hirsuta Gould. n.
Glaucis mazeppa Reich. n.
Phæthornis eurynome Gould. n.
Pygmornis eremita Gould. n.
Pygmornis rufiventris Gould. n.
Eupetomena macroura Gould. n.
Sphenoproctus pampa Gould. n.
Campylopterus hemileucurus Cab. & Hein. n.
Aphantochroa cirrhochloris Cab. & Hein. n.
Lampornis mango Cab. & Hein. n.
Lampornis gramineus Cab. & Hein. n.
Eulampis jugularis Cab. & Hein. n.
Eulampis holosericeus Bonap. n.
Aithurus polytmus Gould. n.
Thalurania glaucopis Bonap. n.
Thalurania furcata Bonap. n.
Florisuga mellivora Bonap. n.
Florisuga fusca Cab. & Hein. n.
Lophornis ornatus Gould. n.
Lophornis magnifica Bonap. n.
Lophornis chalybea Gould. n.
Gouldia Langsdorffii Bonap. n.
* Trochilus colubris Linn. n. e.
Mellisuga minima Bonap. n.
Calypte Costæ Gould. n.
Calypte Anna Gould. n.
Selasphorus platycercus Bonap. n.
Calothorax lucifer Gray. n.
Chætocercus Mulsantii C. & Hein. n.
Chætocercus Rossæ G. R. Gray. n.
Calliphlox amethystina Gould. n.
Pteróphanes Temminckii C. & H. n.
Aglæactis cupripennis Sclat. n.
Rhamphomicrus Stanleyi Sclat. n.
Metallura tyrianthina Reich. n.
Avocettula recurvirostris Bonap. n.
Chrysolampis moschitus Boie. n.
Orthorhynchus exilis Reich. n.
Cephalolepis Delalandii Sclat. n.
Clais Guimetii Sclat. n.
Augastes superbus Bonap. n.
Petasophora serrirostris Gray. n.
Petasophora anais Gould. n.
Polytmus viridissimus Gould. n.
Patagona gigas Gould. n.
Heliangelus clarissæ Cab. & Hein. n.
Clytolæma rubinea Gould. n.
Eriocnemis vestita Bonap. n.
Eriocnemis Alinæ Cab. & Hein. n.
Eriocnemis Luciani Gould. n.
Leucochloris albicollis Reich.
Agyrtria niveipectus Cab. & Hien. n.
Agyrtria Milleri Cab. & Hein. n.
Agyrtria brevirostris Cab. & Hein. n.
Agyrtria albiventris Cab. & Hein. n.
Agyrtria maculata Cab. & Hein. n.
Amazilia beryllina Gould. n.
Eucephala cyanogenys Gould. n.
Chlorostilbon phaethon C. & Hein. n
Chlorostilbon prasinus Gould. n.

MISCELLANEOUS.

* Cacicus cristatus Gmel. n.
* Rhynchotus rufescens Wagl.
* Rhea americana Lath.
* Struthio camelus Linn.
* Dromaius Novæ-Hollandiæ Vieill.
Sphenescus gramineus Gould. n.
* Gallinula phœnicura Penn.
* Ploceus philippinensis Linn. n.
* Ploceus ocularis Smith. n.
* Ploceus baya Blyth? n.
Orthotomus longicauda Strickl. n.
Nectarinia metallica Licht.? n.
Fiscus collaris Linn. n.
* Collocalia nidificans Lath. n.

The Curatorship of Reptiles was left vacant early in the year by Dr. Wilder's acceptance of a Professorship in Cornell University; the Curator subsequently chosen in his place leaving for the south soon after his election, has only just returned. He reports the collection to be in excellent condition, but poorly represented even in our own reptiles; much labelling remains to be done, and the proper identification of the species is not completed. The Curator proposes to supply temporarily some deficiencies in the representation of the Massachusetts species, from the unlabelled specimens laid aside for anatomical purposes. He will also revise the whole collection with care, and have skeletons prepared from the duplicates to illustrate the bony framework of at least each family. The collection has been rearranged in the new gallery devoted to it, and although not fully prepared for public inspection, has been on exhibition for the first time during the past week.

In the new room devoted to Fishes, and recently opened to the public, the specimens have been reassorted in glass jars and arranged in extended faunal divisions: thus, the species from the fresh waters of North America, east of the Rocky Mountains, form one collection; the marine fishes of the Atlantic shores, north of Cape Hatteras a second; those from the south of Cape Hatteras to Brazil a third, and the species of the Hawaiian Islands a fourth. The collection contains more than one thousand numbers, which have all been entered in the catalogue, and in many instances the species identified and recorded under their proper names; but although the collection is in a safe and accessible condition, it cannot be considered in proper order until every jar shall have its label for the information of visitors. It will require more time than the Curator can afford to identify and name all the specimens; and, unless some special arrangement can be made, this work must necessarily proceed very slowly. The collection is very deficient in the sea fishes of our neighborhood, and a large outlay would be necessary to complete it.

In the Entomological department Mr. P. S. Sprague has spent much time upon the Carabidæ, and we are indebted to Dr. LeConte, Dr. Horn and others, for identifying many species sent to them. Rev. Mr. Trask, Mr. Stebbins and Miss Sanborn have also assisted in various ways, both in this and in other departments. Mr. Sanborn has rearranged the Hemiptera of the Harris collection in the new cabinets, a few additional trays of specimens have been placed on exhibition, and about two thousand butterflies from Central America spread, and thus made available for exchange. Much attention has been given to the preservation of the collections, which, although not yet in the most desirable condition, are greatly in advance of their state a year ago. Most of the additions to this department have been made in small quantities by many persons. Some interesting East Indian Lepidoptera have been received in exchange from Mr. A. S. Bickmore, and Dr. C. F. Waters has constantly added new objects from our own vicinity.

The lower Articulates remain in good condition. A number of species of Cancroids and Grapsoids, sent to Mr. S. I. Smith of New Haven, for study, have been carefully labelled and returned; the Astaci have also passed through the hands of Dr. Hagen of Cambridge. Thirty-six specimens of fifteen species of Crustacea, from various parts of America, have been received, in exchange, from the Museum of Yale College.

A portion of the new room devoted to the department of Mollusks, has been placed in order and opened to the public. In the month of January an arrangement was made with the Curator to devote one half of the year to the collections under his charge; in consequence, more than one thousand tablets have already been arranged and placed on exhibition. The Curator's entire attention has been given to the Pratt collection, and its arrangement will be completed before he proceeds to other work. From what he has seen of the Soci-

ety's old collection, he regrets to state that it is even in worse condition than he had supposed. Nearly all the type specimens of Mighels, Gould, and others are missing; very many tablets are empty, while specimens are not infrequently misplaced.

When a newly-appointed Curator finds his collection in a disorganized condition, much time must be spent in preliminary work; this was the case with the last Curator, and although he gave two consecutive months of attention to the collection, it did not suffice to restore anything like order. The subsequent removal of the specimens to their new room, required a repetition of much of the old labor. With the exception of the work done by the last incumbent, there is no evidence of any attention bestowed upon the specimens for the last fifteen years, during which time the Curator has been familiar with the collection; it is now in a worse condition than it was years ago, showing, that in this case, gratuitous aid has proved a failure; and any one who has passed his evenings and holidays in arranging a small private cabinet will appreciate the amount of time which an extensive public collection will require, where all the groups must receive impartial attention, and new donations be placed upon exhibition at the earliest moment.

The Curator considers the upright wall cases in which the shells are arranged as entirely unsuitable for the display of the dry collection; the very nature of such objects requires their exhibition in horizontal cases, where they may be seen from above. He knows of but one other museum in the country where an upright arrangement is adopted, and there only from lack of room,—to be remedied at the earliest possible moment.

The Society is indebted to Dr. J. W. Newcomb and Mr. R. E. C. Stearns for assistance they have rendered in identifying and labelling Mollusks from the Hawaiian Islands and the west coast of America. An effort will be made during the coming year to complete the collection of Massachusetts

Mollusks, and the Curator solicits material for this purpose. The collection lacks all the smaller species, whether from land, sea, or river.

Nearly five hundred species of Mollusks from various localities determined by the late Mr. Cuming, have been presented by the Smithsonian Institution; a valuable donation of fifty-one species of deep-water Mollusks from our own coast, has been received from Mr. E. R. Mayo, and ninety-seven specimens of thirty-three Florida Mollusks from Mr. R. E. C. Stearns.

The collection of Radiates has not been greatly increased during the year; the most important additions are a small collection of starfishes from California, presented by Mr. R. E. C. Stearns, and a series of typical specimens of corals and echinoderms, mostly of species described by the Curator and sent by the Museum of Yale College, in exchange.

A number of Echini have been borrowed by Mr. Alexander Agassiz for monographic work, and the condition of the collection is generally satisfactory. The Echinoderms are all identified and catalogued, although the final labels remain unwritten; the corals have been mostly identified, and about half catalogued; the collection would be improved if all the corals were mounted in their natural position, and attention will be given to this point during the year. The Curator begs leave to state that numerous species of Radiates on our own coast, especially among the Hydroids, Ophiurans, and small starfishes still remain unrepresented.

The specimens in the department of Microscopy are in good condition; there is much rough material in the Bailey Collection ready at any time to be made use of by those interested in diatoms.

Little has been done to the Palæontological collections; nearly all the specimens are still mounted on the old plaster trays, which do not form an agreeable contrast to the new tablets and

labels of the neighboring departments. The Trenton Limestone fossils have, however, been newly mounted and relabelled with the old names. The collection, even in its present meagre representation of past epochs, requires the attention of one person for several months in the year to revise the nomenclature, and relabel and catalogue the specimens. The most important addition consists of a series of casts of twenty-eight species of fossils (mostly cretaceous) received from the Smithsonian Institution.

The department of Geology has been enriched by a collection of more than five hundred named specimens of rocks, purchased from Dr. Krantz of Bonn. The local collections of volcanic products are mostly labelled and arranged in cases, and the systematic collection of rocks has been rearranged. The economic collections have not increased to the extent hoped for by the Curator, and although architects and proprietors of quarries have promised specimens, none have been received during the year. A new case has been placed in the room, but the Curator deems the additional facilities of gallery cases needed for a proper display of the collection under his care.

The Curator of Mineralogy reports that he has rearranged nearly all the specimens in his department, in order to carry out his plan of having the collection correspond in system with that of the recent edition of Dana's Mineralogy. He has also adopted the new system of labelling introduced in other parts of the Museum, and the extent of his work can be estimated, from the fact that about two thousand seven hundred specimens are on exhibition. He expects to complete the task before another annual meeting. As usual, the department is indebted to Dr. C. T. Jackson for many valuable specimens.

I cannot trust myself to dwell on the loss which has befallen the Society in the sudden death of our Curator of Botany;

we cannot penetrate the mystery of his early decease, nor estimate the value of his counsel and the increasing importance of his aid. Mr. Mann's life was so rich in promise, his heart so full of generous impulse, his judgment so mature, that he was endeared to us all. We have looked in vain for his successor, and long shall we lament our loss. The collection remains as he left it, and but few additions have been received during the year.

This closes our review of the Society's operations for the past year. We would pass on to the next with better hope were we not encumbered by the embarrassments of which the Treasurer will shortly speak. For an institution like ours the expenditures of the past twelve months have certainly not been extravagant; all of them seem highly desirable, and we are forced to the conclusion that larger means are absolutely essential to our prosperity and growth. We have taken a high stand among Societies of a kindred nature in this country, but unless our income is nearly doubled we cannot retain it. Two things are urgently required,—more money and a larger staff of assistants; otherwise, in receiving such large additions as have been sent to us since our removal to the present site, without the corresponding monetary bequests, we shall be overwhelmed in the course of a few years by our own external prosperity.

LETTERS RECEIVED

DURING THE YEAR ENDING APRIL 30, 1869.

From the Académie Royale des Sciences, etc., de Belgique, Bruxelles, September 14th, 1867; Bibliotheca Universitatis Lugduno-Batavæ, October 22d, 1867; Bataafsch Genootschap der Proefondervindelijke Wijsbegeerte te Rotterdam, October 23d, 1867; Bureau de la Recherche Géologique de la Suède, Stockholm, December 31st, 1867; Director of the Real Gymnasium und Ober-Realschule, St. Pölten, December, 1867; Office of the Geological Survey of India; Der Nassauischer Verein, Wiesbaden, January 6th, 1868; K. K. zoologisch-botanische Gesellschaft, Wien, January, 1868, and February, 1869; Madras Literary Society, March, 1868; Utrecht Society of Arts and Sciences, March, 1868; Smithsonian Institution, April 6th, June 26th, August 8th and December 12th, 1868; Massachusetts Horticultural Society, June 1st and June 26th, 1868; Royal Society of London, April 20th, 1868; Naturforschende Gesellschaft, Freiburg, May 3d, 1868; Société des sciences physiques et naturelles du Département d'Ille et Vilaine, Rennes, May 27th, 1868; Museum at Bergen, May 28th and October 10th, 1868; Essex Institute, Salem, Mass., May 29th, June 26th, August 5th, October 28th, November 24th, December 14th, 1868, January 16th, February 3d, March 12th and April 14th, 1869; Naturforschende Gesellschaft in Bern, May, 1868; Lyceum of Natural History, New York, June 1st and July 15th, 1868, February 8th, March 1st, April 6th and April 12th, 1869; Massachusetts Institute of Technology, June 2d and 23d, and August 13th, 1868, April 19th, 1869; Institute of Natural Science, Halifax, N. S., June 8th, 1868; New York State Agricultural Society, Albany, June 16th, 1868; Academy of Sciences of Chicago, June 18th, 1868, and April 29th, 1869; Massachusetts Historical Society, Boston, June 27th and Sept. 8th, 1868, and April, 1869; Public Library of the City of Boston, June 27th and December 10th, 1868; Schweizerische Gesellschaft, Bern, June, 1868; Amherst College Library, June, 1868; Regents of the University of the State of New York, Albany, July 3d, 1868; Corporation of Harvard College, Cambridge, July 20th, 1868, and April 6th, 1869; Linnean Society, London, July 22d, 1868; Société Hollandaise des Sciences à Harlem, September 11th, 1868; Société Royale des Sciences à Upsal, September 15th, 1868: Cercle Artistique, Littéraire et Scientifique d'Anvers, September 26th, 1868; Académie Royale des Sciences à Amsterdam, October 13th, 1868; Naturforschende Gesellschaft des Osterlandes zu Altenburg, October 15th, 1868; Corporation of Williams College, Williamstown, October 20th, 1868, and April 20th, 1869; the Natural History and Medical Reunion at Heidelberg, October 21st, 1868; Physikalisch-medizinische Gesellschaft in Würzburg, October 24th, 1868; Gesellschaft zür Beförderung der Naturwissenschaften zu Freiburg i. B., October 24th, 1868; Naturforschende Gesellschaft, Basel, October 30th, 1868; Museum of Comparative Zoölogy, Cambridge, November 13th, 1868,

March 8th and April 9th, 1869; American Philosophical Society, Philadelphia, November 13th, 1868 and March 8th, 1869; Institut National Genevois, Genève, November 14th, 1868; Finska Läkare-Sällskapet, Helsingfors, November 15th, 1867; Zoölogical Society of London, November 10th, 1868; Prof. A. de Bary, Director of the Botanical Garden of the University of Halle, November 10th, 1868; Royal Institution, London, November 18th, 1868; Editors of the Neues Jahrbuch für Mineralogie, Stuttgart, November 4th, 1868; Literary and Philosophical Society of Manchester, November 11th, 1868; K. K. Centralanstalt für Meteorologie und Erdmagnetismus in Wien, November 26th, 1868; Belfast Natural History, etc., Society, December 4th, 1868; Royal Horticultural Society, London, January, 1869; Royal Society of Edinburgh, January 5th, 1869; Anthropological Society of London, January 20th, 1869; Naturforschende Gesellschaft, Görlitz, January 27th, 1869; Naturforschender Verein, Dessau, January, 1869; Portland Society of Natural History, April 6th, 17th and 30th, 1869; American Antiquarian Society, Worcester, Mass., April 6th, 1869, acknowledging the receipt of the Society's publications.

From the K. preussische Akademie der Wissenschaften, Berlin, December 31st, 1867; Bureau de la Recherche Géologique de la Suède, December 31st, 1867, and June 15th, 1868; Manchester Scientific Students' Association, 1868; Nassauischer Verein für Naturkunde, Wiesbaden, January 6th, 1868; Superintendent of the Geological Survey of India, Calcutta, January 8th, 1868: Verein für siebenbürgische Landeskunde, January 24th, 1868; Naturhistorische Gesellschaft zu Hannover, February 2d, 1868; Société Entomologique des Pays-Bas, Leide, February 12th, 1868; Naturforschender Verein zu Riga, February 18th, 1868; K. K. zoologisch-botanische Gesellschaft, Wien, February 25th, 1868; Utrecht Society of Arts and Sciences, March, 1868; Académie Impériale des Sciences, Belles-Lettres, etc., de Lyon, April 10th, 1868; Universidad de Chile, April 15th, 1868; K. Akademie der Wissenschaften, Wien, April 23d and August 26th, 1868; Société Entomologique de France, Paris, April 25th, 1868; Oberhessische Gesellschaft für Natur- und Heilkunde, April 27th, 1868; Académie Royale des Sciences, etc., Bruxelles, April 27th, 1868; K. böhmische Gesellschaft der Wissenschaften, May 14th, 1868; Société Hollandaise des Sciences, Harlem, May 20th, 1868; Batavian Society, Rotterdam, May, 1868; Smithsonian Institution, Washington, D. C., June 1st, 1868; Société Impériale d'Agriculture de Moscou, June 1st, 1868; K. K. geographische Gesellschaft, Wien, June 30th, 1868; Naturforschende Gesellschaft in Bern, June, 1868; Schweizerische naturforschende Gesellschaft, Bern, June, 1868; Naturforscher-Verein zu Riga, July 13th, 1868; Académie Impériale des Sciences, Belles-Lettres, etc., Lyon, July 15th, 1868; Société Linnéene de Lyon, July 15th, 1868; W. Hunter, Acting Secretary of State, in behalf of A. Mazel, Minister from the Netherlands to the United States, August 8th, 1868; Société Royale des Sciences à Upsal, August 1st and September 15th, 1868; Schlesische Gesellschaft für vaterländische Cultur, Breslau, August 15th, 1868; Museum Francisco-Carolinum, Linz, August 19th, 1868; Académie Royale des Sciences à Amsterdam, September 2d, 1868; K. Leopoldino-Carolinische deutsche Academie der Naturforscher, Dresden, September, 1868; Naturhistorische Gesellschaft, Nürnberg, October 1st, 1868; Geological and

Polytechnic Society of the West Riding of Yorkshire, Leeds, October 16th, 1868; Wetterauische Gesellschaft für die gesammte Naturkunde zu Hanau, November 11th, 1868; Université Royale à Christiania, November, 1868; Mannheimer Verein für Naturkunde, November, 1868; K. Preussische Akademie der Wissenshaften, Berlin, December 28th, 1868; Medizinisch-naturwissenschaftliche Gesellschaft, zu Jena, January 29th, 1869; Prof. C. M. Von Siebold, Leipzig, February 15th, 1869; Belfast Natural History and Philosophical Society, February 17th, 1869, presenting their various publications.

From the Gesellschaft naturforschender Freunde zu Berlin, February 7th, 1868; Société d'Agriculture, etc., de la Sarthe, Le Mans, March 1st, 1868; Naturforschende Gesellschaft, Görlitz, March 8th, 1868; Naturforschende Gesellschaft in Danzig, June 2d, 1868; Société Impériale Géographique, St. Petersburg, July 13th, 1868; Royal Society of Northern Antiquaries, Copenhagen, September 1st, 1868; K. K. geologische Reichsanstalt, Wien, October 16th, 1868; Oberhessische Gesellschaft für Natur- und Heilkunde, Giessen, October 24th, 1868; Meklenburgischer patriotischer Verein, Rostock, October 25th, 1868; Société de Physique et d'Histoire Naturelle de Genève, November 1st, 1868; Die Pollichia, Dürkheim, November 20th, 1868; Société d'Histoire Naturelle de Strasbourg, December 10th, 1868; K. Gesellschaft der Wissenschaften zu Göttingen, January, 1869; Société Royale Linnéenne de Bruxèlles, February 15th, 1869; Royal Physical Society of Edinburgh, March 8th, 1869; Edward Newman, Esq., London, Eng., March 11th, 1869; Société Linnéenne de Bordeaux, March 12th, 1869, acknowledging the receipt of the Society's publications, and presenting their own.

From the Geographical Society of Berlin, December 20th, 1868, acknowledging the receipt of the Society's publications, and accepting the proposition to exchange.

From the Oekonomische Gesellschaft, Dresden, April 8th, 1868, presenting its publications and accepting the offer of exchange.

From the K. Norske Universitet, December 7th, 1868, presenting publications and asking exchange.

From the Société Littéraire du Brabant Septentrional à Bois le Duc, November 17th, 1868; Ministère de la Marine et des Colonies, Paris, December 16th, 1868; Société des Sciences Physiques et Naturelles de Bordeaux, January 12th, 1869; Verein für vaterländische Naturkunde in Württemberg, Stuttgart, February 15th, 1869, acknowledging the receipt of the Society's publications, presenting their own, and asking that missing numbers of the Society's publications may be sent to them.

From the Bataafsch Genootschap der Proefondervindelijke Wijsbegeerte te Rotterdam, September 29th, 1868, acknowledging the receipt of the Society's publications, and offering to complete the set of its own publications in the possession of the Society.

From the Universitas Lugduno-Batava, September 14th, 1868; and from Señor Felipe Poey, Havana, September 19th, 1868, acknowledging the receipt of the Society's publications, and promising to supply deficiencies in the publications heretofore received by the Society from them.

From the Société des Sciences de Finlande, Helsingfors, November 30th, 1868,

and from the Schlesische Gesellschaft für vaterländische Cultur, Breslau, December 2d, 1868, acknowledging the receipt of the Society's publications, and regretting inability to supply deficiencies in the publications heretofore transmitted to the Society.

From the K. K. zoologisch-botanische Gesellschaft, Wien, November 23d, 1868, presenting its publications, regretting its inability to furnish publications asked for by the Society, and asking that missing numbers of the publications transmitted by the Society may be supplied.

From the K. K. zoologisch-botanische Gesellschaft, Wien, October 12th, 1867; Naturhistorischer Verein der preussischen Rheinlande und Westphalens, Bonn, March 1st, 1868; Verein für vaterländische Naturkunde in Württemberg, Stuttgart, April 12th, 1868; Superintendent of the Geological Survey of India, Calcutta, May 20th, 1869; Andrew Murray, Esq., London, November, 1868; Institut Impérial de France, Paris, December 5th, 1868; and the Société d'Agriculture, Sciences et Arts de la Sarthe, Le Mans, February 27th, 1869, acknowledging the receipt of the Society's publications, and asking that missing numbers may be supplied.

From the Société Entomologique de France, Paris, April 16th, 1869, acknowledging the receipt of the Society's publications, asking for missing numbers, and promising to complete the series of its publications in the possession of the Society so far as possible.

From the Société Linnéenne de Bordeaux, March 17th, 1869, asking that deficiencies in their series of the Society's publications may be supplied to them, and promising to reciprocate.

From the Royal Geographical Society, London, January 4th, 1869, presenting some of the back numbers of its publications.

From Dr. H. Loew, Meseritz, Prussia, February 28th, 1868; Prof. O. C. Marsh, New Haven, Conn., July 6th, 1868; Prof. William H. Brewer, New Haven, Conn., July 22d, 1868; Prof. T. Eulenstein, Dresden, Saxony, October 5th, 1868; Prof. Burt. G. Wilder, Cornell University, Ithaca, N. Y., January 24th, 1869; Prof. Charles Wedl, Vienna, Austria, February 20th, 1869, in acknowledgment of their election as Corresponding Members.

From Dr. Christopher Kollock, Cheraw, N. C., June 22d and October 21st, 1868; Henry Davis, Money Creek, Minnesota, October 27th, 1868; and John W. M. Appleton, Waldingfield, W. Va., November 5th, 1868, offering specimens to the Society, etc.; A. A. Gautier, Chevalier de la Légion d'Honneur, Paris, September 30th, 1868, a circular concerning the cultivation of the Potato; Dr. C. A. Martius, München, December 15th, 1868, announcing the death of Dr. Carl Friedrich Philipp von Martius; Biological Department of the Academy of Natural Sciences, Philadelphia, February 25th, 1869, a circular concerning the objects of the department; the University of Vermont, Burlington, March 9th, 1869, in acknowledgment of having been placed on the list of Institutions to which the Society's publications are sent.

ADDITIONS TO THE LIBRARY

DURING THE YEAR ENDING APRIL 30, 1869.

A Guide to the Study of Insects. By A. S. Packard, Jr., M. D. Parts I-VI. 8vo. Salem, 1868-9. *From the Author.*

Annual Meteorological Synopsis for the year 1867. By J. B. Trembley, M. D., in the city of Toledo, Ohio. 8vo. Pamph. *From the Author.*

A System of Mineralogy. By James Dwight Dana, aided by George Jarvis Brush. 5th Edition. 8vo. New York, 1868. *From the Author.*

Queries on the Red Sandstone of Vermont, and its Relations to other Rocks. By the Rev. John B. Perry. 8vo. Pamph. Boston, 1868. *From the Author.*

Notes on certain Terrestrial Mollusca; with Descriptions of new Species. By Thomas Bland. 8vo. Pamph. New York, 1868. *From the Author.*

The Institutes of Medicine. By Martyn Paine, M. D. 8vo. New York, 1867. *From the Author.*

Contributions to the Mineralogy of Nova Scotia. By Professor How. III. 8vo. Pamph. 1868. *From the Author.*

Catalogue of the Phænogamous Plants of the United States east of the Mississippi, and of the Vascular Cryptogamous Plants of North America, north of Mexico. By Horace Mann. 8vo. Pamph. Boston, 1868. *From the Author.*

Mr. Meek's Notes on my Preliminary Report of the Geology of Kansas, as edited by Dr. Hayden. By Prof. G. C. Swallow. 8vo. Pamph. St. Louis, 1868. *From the Author.*

On some Cretaceous Fossil Plants from Nebraska. By Leo Lesquereux. 8vo. Pamph. Columbus, 1868. *From the Author.*

Céphalopodes Siluriens de la Bohême. Groupement des Orthocères. Par Joachim Barrande. 8vo. Pamph. Paris, 1868. *From the Author.*

Derivative Hypothesis of Life and Species. By Professor Owen. 8vo. Pamph. London, 1868. *From the Author.*

Capillar-Blut undefibrinirtes zur Transfusion. Von Dr. med. Franz Gesellius. 8vo. Pamph. St. Petersburg, 1868. *From the Author.*

Outlines of Comparative Anatomy and Medical Zoölogy. By Harrison Allen, M. D. 8vo. Philadelphia, 1869. *From the Author.*

Mutillarum novarum species aliquot. Auctore H. de Saussure. 8vo. Pamph. Paris, 1867. *From the Author.*

Notes on the later extinct Floras of North America. By J. S. Newberry. 8vo. Pamph. New York, 1867. *From the Author.*

The Pampas and Andes. A Thousand Miles' Walk across South America. By Nathaniel H. Bishop. 12mo. Boston, 1869. *From the Author.*

Action of Anæsthetics on the Blood Corpuscles. By J. H. McQuillen, M. D. 8vo. Pamph. Philadelphia, 1869. *From the Author.*

Introduction to Zoölogy. By Robert Patterson, F. R. S. 16mo. Belfast, 1866. *From the Author.*

On the Geology and Silver Ore of Wood's Location, Thunder Cape, Lake Superior. By Thos. Macfarlane. 8vo. Pamph. Actonvale, 1869. *From the Author.*

Die Vegetationsverhältnisse von Croatien. Von Dr. August Neilreich. 8vo. Wien, 1868. *From the Author.*

Die Zoophyten und Echinodermen des Adriatischen Meeres. Von Prof. Cam. Heller. 8vo. Pamph. Wien, 1868. *From the Author.*

On the Origin of Genera. By Edward D. Cope, A. M. 8vo. Pamph. Philadelphia, 1869. *From the Author.*

Flora Brasiliensis. Edidit Carolus Fridericus Philippus de Martius. Fasc 44–46. Folio. Lipsiae, 1868. *From Mrs. B. D. Greene.*

Annual Report of the Surgeon-General, United States Army. 8vo. Pamph. Washington, 1868. *From the Surgeon-General.*

California Wine, Wool and Stock Journal. J. Q. A. Warren, Editor. Vol. I. 4to. San Francisco, 1868. *From the Editor.*

Geological and Natural History Survey of North Carolina. Part III. Botany, by Rev. M. A. Curtis, D. D. 8vo. Raleigh, 1867. *From C. J. Sprague.*

Report on the State of the Militia of the Province of Canada, for the year 1867. 8vo. Ottawa, 1868. *From L. A. H. Latour.*

Forty-eighth Annual Report of the Mercantile Library Association of the City of Boston. 8vo. Pamph. 1868. *From the Association.*

The Galaxy, Vol. V, No. 6. 8vo. New York, 1868. *From the Publishers.*

Drawing of Cypræa. *From Mr. G. W. Pratt.*

The Journal of the Franklin Institute. 3d Series. Vol. LVI, No. 1. 8vo. Philadelphia, 1868. *From the Institute.*

American Cervus, by John D. Caton. 8vo. Pamph. Ottawa, 1868. *From Mr. B. D. Walsh.*

Photographs of Machærodon. *From Mr. J. Dorr.*

A General Catalogue of Books, arranged in Classes, offered for sale by Bernard Quaritch. 8vo. London, 1868. *From Mr. Bernard Quaritch.*

Beitrag zur Kentniss der mikroskopischen Fauna jurassischer Schichten. Von Conrad Schwager. 8vo. Pamph. Stuttgart, 1865. *From Dr. C. F. Winslow.*

Catalogue of the Officers and Students in Yale College, 1868–69. 8vo. Pamph. New Haven, 1868. *From the Trustees of Yale College.*

Hawaiian Club Papers. Edited by a Committee of the Club. 8vo. Boston, 1868. *From Mr. William T. Brigham.*

Ueber Capillargefäszsysteme von Gasteropoden. Von. Prof. Dr. C. Wedl. 8vo. Pamph. Wien, 1868. *From Dr. F. H. Brown.*

The Missisquoi Springs and their wonderful Cures. 12mo. Pamph. New York. *From the Proprietors of the Springs.*

Acts and Resolves passed by the General Court of Massachusetts, in the years 1864–68. 8vo. Boston. *From Mr. Alanson Hawley.*

The Athenæum. 1850, Vol. I; 1851, II–IV; 1852, I–III; 1853, I–II: 1854, I–III. 4to. London. *From Mr. N. L. Hooper.*

Public Library of Cincinnati. Rules, By-Laws and other Items, with Annual Reports. 8vo. 1868. *From the Trustees.*

The Inaugural Address of Nathaniel B. Shurtleff, Mayor of Boston, to the City Council, January 4, 1869. 8vo. Boston, 1869. *From the City of Boston.*

An Act to aid in the preservation of Birds, Birds' Eggs and Deer. Senate, No. 111. The same, Senate, No. 191. 8vo. Pamph. Boston, 1868. *From Mr. H. A. Purdie.*

Free Public Library of the City of New Bedford. Seventeenth Annual Report of the Trustees. 8vo. 1869. Supplement to the Catalogue. 8vo. 1869. *From the Trustees.*

Geology of New Jersey. George H. Cook, State Geologist. 8vo. Newark, 1868. Map, 4to. *From the Board of Managers of the Survey.*

North-West Territory. Report on the Assiniboine and Saskatchewan Exploring Expedition, by Henry Youle Hind, M. A. 4to. Toronto, 1859. *From Mr. C. S. Minot.*

Reports of the Commissioners of Fisheries of the State of Maine, for the years 1867 and 1868. 8vo. Augusta, 1869. *From the Commissioners.*

Report of the Commissioner of Agriculture and Arts of the Province of Ontario, for the year 1868. 8vo. Toronto, 1869. *From the Commissioner.*

A Concise History of High Rock Spring. By Henry McGuier. 16mo. Pamph. Albany, 1868. *From Dr. S. Kneeland.*

Photographs of Japanese. *From Mr. C. K. Dillaway.*

Offenes Schreiben an Herrn Franz Maurer, als Erwiederung auf dessen Schmähschrift "Nicobariana." 8vo. Pamph. Berlin, 1868. *From M. Georg Ritter von Frauenfeld.*

Protection a Boon to Consumers. Address before the National Association of Knit Goods Manufacturers, May 1, 1867. By John L. Hayes. 8vo. Boston, 1867.

The Fleece and the Loom. Address before the National Association of Wool Manufacturers, Sept. 6, 1865. By the same. 8vo. Boston, 1865. *From the Author.*

List of Birds collected in Southern Arizona by Dr. E. Palmer; with remarks. By Dr. Elliot Coues, U. S. A. 8vo. Pamph. Philadelphia, 1868.

A Monograph of the Alcidæ. By the same. 8vo. Pamph. Philadelphia, 1868. *From the Author.*

On Sussexite, a new borate from Mine Hill, Franklin Furnace, Sussex Co., N. J. By George J. Brush. 8vo. Pamph. New Haven, 1868.

Catalogue of Meteorites in the Mineralogical Collection of Yale College. By the same. 8vo. Pamph. New Haven, 1869. *From the Author.*

Descriptions of twelve new species of Unionidae from South America, etc. By Isaac Lea. 8vo. Pamph. Philadelphia, 1868.

Observations on the Genus Unio. By Isaac Lea, LL.D. Vol. XII. 4to. Philadelphia. *From the Author.*

Rapport sur les Phénomènes Chimiques de l'Eruption de l'Etna en 1865. Par M. F. Fouqué. 4to. Pamph. Paris, 1866.

Rapport sur les Tremblements de Terre de Céphalonie et de Mételin en 1867. By the same. 8vo. Pamph. Paris, 1867.

Premier Rapport sur une Mission scientifique à l'Ile Santorin. By the same. 8vo. Pamph. Paris, 1867. *From the Author.*

On the Origin of the so-called Lignilites or Epsomites. By Prof. O. C. Marsh. 8vo. Pamph. New Haven, 1867.

Observations on the Metamorphosis of Siredon into Amblystoma. By the same. 8vo. Pamph. New Haven, 1868.

Notice of a new species of Fossil Horse. By the same. 8vo. Pamph. New Haven, 1868. *From the Author.*

Une Ascension dans les Montagnes Rocheuses. Par J. Marcou. 8vo. Pamph. Paris, 1867.

Notice sur les Cartes Géologiques de Victoria (Australie) et des Iles Britanniques. By the same. 8vo. Pamph. Paris, 1868.

Distribution Géographique de l'Or et de l'Argent aux Etats-Unis et dans les Canadas. By the same. 8vo. Pamph. Paris, 1867. *From the Author.*

Description of a new Pseudomorpha from California, with notes on the Pseudomorphidæ. By Geo. H. Horn, M. D. 8vo. Pamph. Philadelphia, 1867.

Geotrupes of Boreal America. By the same. 8vo. Pamph. Philadelphia, 1868.

Catalogue of Coleoptera from South Western Virginia. By the same. 8vo. Pamph. Philadelphia, 1868. *From the Author.*

Descriptions of American Lepidoptera. No. 3. By A. R. Grote and C. T. Robinson. 8vo. Philadelphia, 1868.

Notes on the N. A. Lepidoptera contained in the British Museum, and described by Francis Walker. By the same. 8vo. Pamph. Philadelphia, 1868.

List of the Lepidoptera of North America. By the same. 8vo. Pamph. Philadelphia, 1868. *From the Authors.*

Symbolæ Sirenologicæ. Auctore Johanne Friderico Brandt. 4to. Petropoli, 1861–8.

Ueber eine neue Abbildung der Steller'schen Seekuh. By the same. 8vo. Pamph. St. Petersburg, 1867.

Bericht über den zweiten und dritten Fascikel der Symbolæ Sirenologicæ. By the same. 8vo. Pamph. 1867.

Ueber die systematische Stellung und die Verwandtschaften des Dodo (Didus ineptus). By the same. 8vo. Pamph. St. Petersburg, 1867. *From the Author.*

De la Classification de certains Opercules de Gastéropodes. Par M. Ch. Des-Moulins. 8vo. Pamph. Bordeaux, 1867.

Lettre à M. François Crépin. By the same. 8vo. Pamph. Bordeaux, 1868.

Liste des principaux Fossiles recueillis par les Membres de la Société Linné-

enne à Cazeneuve dans le Calcair de Bazas. By the same. 8vo. Pamph. Bordeaux, 1868.

Descriptions et Figures de quelques Coquilles Fossiles du Terrain Tertiare, etc. By the same. *From the Author.*

The Ainos or Hairy Men of Yesso, Saghalien and the Kurile Islands. By Albert S. Bickmore. 8vo. Pamph. New Haven, 1868.

Sketch of a Journey from Canton to Hankow, through China. By the same. 8vo. Pamph. New Haven, 1868.

Sketch of a Journey through the Interior of China. By the same. 8vo. Pamph. Shanghai, 1867.

Recent Elevations in China and Japan. By the same. 8vo. Pamph. Shanghai, 1867. *From the Author.*

Osservazioni del M. E. Prof. Ab. Cav. Franc. Zantedeschi all' Argomento addotto all' Ipotesi della Elettricità negativa d'Induzione, etc. 8vo. Pamph. Venezia, 1868.

Dei Caratteri della Tromba terrestre accaduta nel Friuli il 28 di Luglio, 1867. By the same. 8vo. Pamph. Venezia, 1868.

Della Necessità di nuovi studi meteorologici, etc. Nota del C. F. Zantedeschi. 8vo. Pamph. Venezia, 1868.

Documenti intorno agli studi Spettroscopici. By the same. 8vo. Pamph. Padova, 1868.

Pubbliche Date del Magnettoelettrico ed Elettromagnetico. By the same. 8vo. Pamph. Padova, 1868.

La Scienza alla Esposizione Universale di Parigi nel 1867. By the same. 8vo. Pamph. Venezia, 1868. *From the Author.*

Mimus melanopterus. By George N. Lawrence. 8vo. Pamph. New York, 1849.

Observations on Mr. Bell's Paper on the Limosa scolopacea of Say. By the same. 8vo. Pamph. New York, 1849.

On the occurrence of the Caspian Tern (Sylochelidon caspius) in North America. By the same. 8vo. Pamph. New York, 1850.

Description of a new species of Tyrannus. By the same. 8vo. Pamph. New York, 1850.

Descriptions of new species of Birds of the Genera Toxastoma Wagler, Tyrannula Swainson, and Plectrophanes Meyer. By the same. 8vo. Pamph. New York, 1851.

Additions to North American Ornithology. Nos. 2–3. By the same. 8vo. New York, 1851–3.

Ornithological Notes. By the same. Nos. 1–2. 8vo. New York, 1852–3.

Descriptions of new species of Birds of the Genera Ortyx Stephens, Sterna Linn., and Icteria Viellot. By the same. 8vo. Pamph. New York, 1853.

Description of a new species of Bird of the Genus Larus Linn. By the same. 8vo. Pamph. New York, 1854.

Description of a new species of Humming Bird of the Genus Mellisuga

Brisson, with a note on Trochilus aquila Bourcier. By the same. 8vo. Pamph. New York, 1855.

Descriptions of new species of Birds of the Genera Chordeiles Swainson, and Polioptila Sclater. By the same. 8vo. Pamph. New York, 1856.

Descriptions of two new species of Gulls in the Museum of the Smithsonian Institution. By the same. 8vo. Pamph. New York, 1858.

Descriptions of seven new species of Humming Birds. By the same. 8vo. Pamph. New York, 1858.

Observations on Gundlach's "Notes on some Cuban Birds." By the same. 8vo. Pamph. New York, 1858.

Descriptions of three new species of Humming Birds of the Genera Heliomaster, Amazilia, and Mellisuga. By the same. 8vo. Pamph. New York, 1860.

Description of a new species of Bird of the Genus Phaeton. By the same. 8vo. Pamph. New York, 1860.

Descriptions of new species of Birds of the Genus Myiarchus and Phlogopsis. By the same. 8vo. Pamph. New York, 1860.

Notes on some Cuban Birds. By the same. 8vo. Pamph. New York, 1860.

Catalogue of a Collection of Birds made in New Granada, by James McLeannan, Esq., of New York, with notes and descriptions of new species. By the same. Parts I–IV. 8vo. New York, 1861–3.

Descriptions of three new species of Birds. By the same. 8vo. Pamph. New York, 1861.

Descriptions of six new species of Birds of the Families Charadridæ, Trochilidæ and Caprimulgidæ. By the same. 8vo. Pamph. New York, 1862.

Descriptions of new species of Birds of the Families Vireonidæ and Rallidæ. By the same. 8vo. Pamph. Philadelphia, 1863.

Descriptions of new species of Birds of the Families Cærebidæ, Tanagridæ, Icteridæ and Scolopacidæ. By the same. 8vo. Pamph. Philadelphia, 1864.

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Descriptions of North American Bees. No. I. By E. T. Cresson. 8vo. Pamph. Boston, 1868.

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History of the United Netherlands. By John Lothrop Motley. Vol. III. 8vo. New York, 1868.

Autobiography of Benjamin Franklin. Edited by John Bigelow. 8vo. Philadelphia, 1868.

Modern Inquiries. By Jacob Bigelow, M. D. 8vo. Boston, 1867.

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A History of Massachusetts in the Civil War. By William Schouler. 8vo. Boston, 1868.

Recollections of a Busy Life. By Horace Greeley. 8vo. New York, 1868. *Deposited by the Republican Institution.*

ADDITIONS TO THE MUSEUM

DURING THE YEAR ENDING APRIL 30, 1869.

MAMMALS AND COMPARATIVE ANATOMY. Skin of black-footed Kangaroo, collected by Capt. I. E. A. Todd at King George's Sound, Australia, by Mr. Nath. Wales. A large, white birch log, bearing marks of the teeth of the beaver, and samples of wood used by the beavers as food, etc., from Rangely Lake, Me., by Mr. Luther Hills. A specimen of *Vespertilio carolina* from Ashburnham, Mass., by Mrs. Addison Howe. Five house mice, *Hesperomys leucopus*, in alcohol, from Hart's Location, N. H., by Dr. S. A. Bemis. Cranium and Atlas of *Felis* from the Cape of Good Hope, by Dr. Edw. Gilchrist, U. S. N. A skeleton of Negress from Zanzibar, Africa, by Mr. Samuel V. Goodhue. Skull of an albatross, *Diomedea exulans*, from the South Atlantic, by Dr. G. F. Waters. An embryo spermophile from Arizona, by Capt. F. Dame. A young black bear, ♂, by Mr. Wm. T. Adams. Three fatty tumors from abdominal cavity of domestic fowl, by Mr. P. S. Sprague. A specimen of the star-nosed mole, *Condylura cristata*, from Brookline, by Mr. J. E. Cabot. A fine head with antlers of *Cervus virginianus*, ♂, from Northern Maine, by Messrs. C. D. and I. H. Presho. A young male Prong-horn, *Antilocapra americana*, by the City of Boston.

BIRDS. Twenty-five specimens of birds, most of them mounted, from Newtonville, by Mr. L. B. Thaxter, being species needed to complete the Society's New England collection. A large number of birds' skins from Central and South America, by Mrs. Henry Bryant. Mounted specimen of a variety of Pigeon, *Columba livia*, bred in Cambridge, by Mr. Edw. D. Harris. A small bird skin from St. Domingo, by Mr. E. C. Ring. A bird from Hart's Location, N. H., by Dr. S. A. Bemis. A fresh specimen of Ruddy Duck, *Erismatura rubida*, ♀, from Halifax, Mass., by Mr. C. Cowing. Barred owl, *Syrnium nebulosum* from Auburndale, Mass., by Mr. Chas. O. Bouvé. Thirty-two birds' skins from Equatorial America, by Prof. James Orton. A mounted specimen of *Gallinula galeata* shot in Massachusetts, by Mr. E. A. Brigham. Skin of white-winged cross-bill, ♀, *Curvirostra leucoptera*, from Cambridge, by Mr. W. W. Dodge. A Pine Grosbeak, ♀, *Pinicola canadensis*, from Brookline, by Mr. J. E. Cabot. An owl, fresh, from North Brookfield, by Mr. Sam. Mixter. Eighty specimens of seventy-six species of birds' skins, determined by Mr. Geo. N. Lawrence, from Costa Rica and vicinity, by the Smithsonian Institution. A young, unfledged owl, *Bubo virginianus*, from Brookline, by Mr. Arthur Smith.

Birds' Nests and Eggs. Ninety-seven specimens of seventy-two species of birds' nests and one hundred and forty-five specimens of fifty-seven species of eggs from various parts of North America, selected by Dr. T. M. Brewer with a view to complete the Society's collection, by the Smithsonian Institution. Seventy species of North American eggs, represented by fifteen hundred and ninety-eight specimens, collected by Dr. Henry Bryant, by Mrs. Bryant. Twelve specimens of six species of eggs, by exchange with Mr. C. M. Jones, North Madison, Ct. Egg laid by ♀ canary paired with ♂ linnet, by Mr. J. Baird. Eighteen nests of birds containing eggs collected by Geo. Welch of Lynn, eighty-three specimens of forty-six species of European birds' eggs, and nest of *Eriocnemis Luciani* from the eastern slope of Pichincha, S. A., collected by Dr. E. Coues, by Dr. T. M. Brewer.

Reptiles. Eggs of the black snake, *Bascanion constrictor*, from Lexington, by Mr. Chas. A. Wellington. Ten specimens of salamanders, in alcohol, by Mr. F. G. Sanborn. Four saurians from Madeira, by Dr. Francis H. Brown. Five reptiles from Texas, by Mr. C. P. Dillaway. Two snakes in alcohol, from Baltimore, by Mrs. R. A. and E. M. Howard. Box-tortoise, *Cistudo carolina*, from North Wrentham, Mass., by Miss Abbie H. C. Hills. Rattlesnake, *Crotalus durissus*, from Milton, Mass., by Mr. Arthur Sias. A specimen of *Diadophis punctatus* from Phillips, Me., by Mr. Luther Hills. Three saurians from Arizona, by Capt. F. Dame. An *Anolius carolinus* with bifurcation of the posterior extremity, from South Carolina, by Dr. Geo. F. Waters.

Fishes. A sword of the sword-fish, *Xiphias gladius*, by Dr. H. I. Bowditch. Twenty-two fishes from Madeira, by Dr. Francis H. Brown. Two fishes belonging to the genus *Ostracion* from the Bahamas, by Mr. Otto Cuntz. One *Remora* from the Gulf of Mexico, by Mr. C. P. Dillaway. A Harpoon float made from the stomach of the Black-fish, by Capt. N. E. Atwood. A *Sygnathus* in alcohol, from Cohasset, by Dr. S. Kneeland. The sixth spine of the dorsal fin of a sword-fish, *Histiophorus* sp., obtained forty miles west of Cape St. Lucas, by Mr. Caleb Howland, with a pencil sketch of the animal, by Mr. H. F. Copeland. A mass of eggs of *Cyclopterus lumpus*, by Mr. D. F. Carlton. A plank of southern pine perforated by, and containing a portion of, the sword of the sword-fish, *Histiophorus*, from the side of ship Pocahontas, by the owners, Messrs. Foster, Waterman & Co. Specimens of *Amblyopsis* from Mammoth Cave, Ky., by Mr. S. H. Scudder. A small fish, said to have been taken from the stomach of a dolphin, on the passage of the Brig Abby, Capt. W. H. Lewis, from Cienfuegos to Boston, by Capt. H. Merrill.

Insects. Several insects from Mexico, and two species of butterflies from the Philippine Islands, by Dr. S. Kneeland. A prepared section of the pupa of *Samia Cecropia* and two specimens of *Mitremyces cinnabarinum* from Medford, by Mr. F. G. Sanborn. Twenty-five insects and myriapods from Madeira, by Dr. Francis H. Brown. A living specimen of *Mygale fasciata* from Calcutta, by Mr. Wm. E. Baker. Ten species of Insects from Texas, by Mr. C. P. Dilla-

way. Three hundred and ninety-five mounted specimens of various orders of insects from Texas, by exchange with Mr. G. A. Belfrage. Two living specimens of the "Colorado Potato beetle," *Doryphora decemlineata* from Laporte, Ind., by Mr. W. O. Ross. A hymenopterous insect from Boston, by Mr. R. C. Greenleaf. About seventy-five specimens of insects and larvæ in alcohol, from North Wrentham, Mass., by Mr. Luther Hills. Seventy-five specimens of *Cicada septendecim* from Baltimore, by Dr. C. D. Homans. One hundred and eighteen European Coleoptera in alcohol, and one hundred and fifty insects also alcoholic, from Barnstable, Mass., by Mr. T. W. Thacher. Over three hundred alcoholic specimens of insects from Springfield, Mass., by Mr. Solomon Stebbins. Forty-five alcoholic specimens of insects from Lexington, by Mr. Chas. A. Wellington. Twenty-eight alcoholic specimens of insects from West Newton, by Mr. Henry A. Purdie. Twenty-one larvæ of Lepidoptera from South Dedham, by Mr. Nelson B. White. One larva of a Lepidopteron from Charlestown, by Mr. Stillman Holt. One lepidopterous larva from Andover, by Mr. A. C. Locke. Two specimens of *Cicada septendecim* from Ohio, by Dr. J. E. Tyler. *Diapheromera femorata* from Jamaica Plain, by Mr. Isaac H. Cary. *Diapheromera femorata* from vicinity, by Mr. H. Blanchard. Alcoholic specimen of *Spirobolus marginatus* and thirty-eight specimens of insects, from Waldingfield, Kanawha Co., West Va., by Maj. J. W. M. Appleton. Sixty-four mounted specimens of insects from South America, by Dr. B. S. Shaw. Alcoholic specimen of *Epeira fasciata* and egg sac from Hampton Falls, N. H., by Miss Francis Dow. Nest of *Mygale Girardii* from California, by Mr. R. E. C. Stearns. Cells containing young of the "yellow jacket" wasp, *Vespa germanica*, from China, Me., by Mr. J. McKay. A fine specimen of the golden nut-weevil, *Balaninus Sayi* from Woburn, by Mr. J. G. Shute. *Diapheromera femorata*, ♂, from Malden, by Mr. John K. Abbott. A dry specimen of *Mygale* from St. Domingo, by Mr. E. C. Ring. A number of insects from Hart's Location, N. H., by Dr. S. A. Bemis. *Diapheromera femorata*, ♀, from Suncook, N. H., by Dr. Hildreth. Over three hundred specimens, illustrating various facts in insect economy, from the West Indies, Southern States and New England, seventy-five Lepidoptera from the Isle of Pines, and seven from India, by Mr. S. H. Scudder. A large number of fine specimens of insects pinned, and others in alcohol from Walpole, by Miss Clarissa Guild. Several singular cylindrical galls from Holly Springs, Miss., by Dr. Arnold. Five Arachnidæ, four Myriapoda and two specimens of *Stenopelmatus talpa* from Arizona, by Capt. F. Dame. Cocoon of *Platysamia Cecropia* from Dedham, by Mr. Geo. F. Fisher. Ten finely mounted specimens of insects from Cambridge, by Mr. S. Lockwood. Two living specimens of *Belostoma Haldemanum* from Jamaica Plain, by Mr. C. F. Smith. Large dry specimen of *Tropidacris dux* from South America, by Miss Whitwell. Nine specimens of five species of *Crambus*, from Beverly, determined by Prof. Zeller, by Mr. Edward Burgess. A pair of *Boreus brumalis* in alcohol, from Medford, by Dr. E. P. Colby. A pair of *Chrysophora chrysochroa* from Napo River, S. A., by Prof. James Orton. Sixteen specimens of *Brephos infans* and two abnormal cocoons of Saturnians, from Jamaica Plain, by Mr. C. S. Minot. Several galls of *Cynips quercus-ficus*, cocoons of *Callosamia Promethea*, cluster of eggs of *Clisiocampa sylvatica*, one hundred and sixty

specimens of insects in different stages, and over a hundred specimens of cocoons, galls and other illustrations of insect economy from Newton Corner, by Dr. Geo. F. Waters.

CRUSTACEA AND WORMS. Several crustacea from Mexico, by Dr. S. Kneeland. Twenty crustacea from Madeira, by Dr. Francis H. Brown. Three crustacea from Texas, by Mr. C. P. Dillaway. Large claw of Lobster, *Homarus americanus*, from vicinity, the animal weighing twenty-five pounds, by Dr. B. Joy Jeffries. Two specimens of *Pycnogonum* from the Bay of Fundy, by Mr. L. L. Thaxter. Thirty-six specimens, representing fifteen species of crustacea, from North, Central and South America, by exchange with the Museum of Yale College, New Haven, Ct. An entozoon from the domestic fowl, by Dr. Geo. F. Waters. A ♀ *Astacus* with its young, and *Astacus* from the Mammoth Cave, Ky., by Mr. S. H. Scudder. A small crab in alcohol, from St. Augustine's, Fla., by Mr. E. Samuels.

SHELLS. A number of shells by Dr. H. I. Bowditch. Several mollusca from Mexico, by Dr. S. Kneeland. About two hundred Mollusca from Madeira, by Dr. Francis H. Brown. Two specimens of *Caprella* from the Bay of Fundy, by Mr. L. L. Thaxter. Pearly concretions found in oysters, by Dr. S. Kneeland. Four hundred and fifty species of shells of mollusca from various localities, determined by Hugh Cuming, by the Smithsonian Institution. Sixty specimens of fresh water mollusca from Waterville, Me., by Dr. Geo. F. Waters. Two specimens of *Platyodon cancellatum* from California, and ninety-seven specimens of shells of thirty-three species of mollusca, from the Atlantic Coast near Florida, by Mr. R. E. C. Stearns. A number of shells of mollusca from the deep sea Atlantic, by Mr. E. R. Mayo.

RADIATES, SPONGES, ETC. Flower-basket Sponges, *Euplectella speciosa*, from the Philippine Islands, four specimens, two of which contained Crustacea, by Mr. H. U. Jeffries, and one specimen by Capt. H. P. Snow. A large "Portuguese Man o'War," *Physalia*, from the coast of Texas, by Mr. C. P. Dillaway. Three specimens of *Asterina miniata* from California, and three specimens of *Mellita quinquepora* from Amelia Island, Fla., by Mr. R. E. C. Stearns. A *Madrepora*, by Mr. D. F. Carlton.

BOTANY. Several specimens of twigs and leaves of the Red Cedar, *Juniperus virginiana*, with its parasitic fungus, *Podisoma juniperi*, by Mr. Luther Hills. Leaves of *Quercus pedunculatus* from Madeira, and a ruler illustrating various woods of Madeira, by Dr. Francis H. Brown. Sixty-five specimens of dried plants, fibrous vegetable material and samples of wood from Africa, by the Massachusetts Horticultural Society. Dry specimens of fungi from Hart's Location, N. H., by Dr. S. A. Bemis. Two specimens of *Lycopodium lepidodendron* from Texas, by Dr. Edw. Gilchrist, U. S. N. Twelve specimens of two species of grasses from the Philippine Islands, by Dr. S. Kneeland. A pod of *Theobroma cacao* from Cuba, and a specimen of *Cordyceps entomorhiza* on larva of a *Lachnosterna*, by Mr. S. H. Scudder. Three woody tumors, or

"wood-pearls," from the Maple, by Mr. Samuel Berry, Porter, Me. Several specimens of fruits and seed-vessels, by Mr. D. F. Carlton. Nine specimens of plants from vicinity of Boston, and three specimens of *Polyporus* on willow from Newton, by Dr. G. F. Waters. Twelve specimens of cones and leaves of four species of *Coniferae* from the Pacific Coast, and leaves and cones of two species of pines, *P. tæda* and *P. palustris*, from Florida, by Mr. R. E. C. Stearns.

MICROSCOPY. Slide containing skin of Sole, by Mr. Chas. Stodder. Slide containing infusorial earth from Monmouth, Me., by Mr. Edward Bicknell. A mass of infusorial earth from Nevada, by Mr. R. E. C. Stearns. Slide containing specimen of *Aulacodiscus oreganus* by Mr. E. Samuels.

PALÆONTOLOGY. Fossils from Cincinnati, Ohio, by Miss Kyle. Shell incrustations from Hawkinsville, Fla., by Mr. Geo. A. Boardman. Two fossil shells from Madeira, by Dr. Francis H. Brown. Thirty specimens of fossil echinoderms from the Chalk Cliffs of Dover, Eng., by Mr. Luther Hills. One hundred and thirty-two specimens of fossils from Decorah, Iowa, by Mr. Henry Davis. A fossil *Buccinum* from Labrador, by Mr. S. H. Scudder. Seven fossil shark's teeth from Holly Springs, Miss., by Dr. Arnold. Specimen of fossil coral and coal-plant from Neuse River, N. C., by Dr. N. H. Talbot. Casts of twenty-eight species of fossil mollusca and crustacea, by the Smithsonian Institution, through Mr. W. H. Dall. Four specimens of fossil coral and chalcedony from Florida, by Mr. R. E. C. Stearns.

GEOLOGY. Over one hundred specimens of rocks and minerals, by Dr. H. I. Bowditch. Three specimens of Lime rock from Madeira, by Dr. Francis H. Brown. Four specimens of Porphyry and "Green horn-stone," from Melrose, by Mr. Wm. B. Shedd. Ten specimens of manufactured stone, by Messrs. McLean Bro's. A "Pot-hole" and eight specimens of rocks from Maine, by Mr. Luther Hills. Sixteen specimens of rocks from Rangely Lake, Me., by Mr. Geo. L. Vose, illustrating his paper in Vol. I, Part IV, of the Memoirs of the Society. Basaltic column from the "Giant's Causeway," Ireland, and a wooden model of the Causeway, by Dr. W. W. Morland. A specimen of birch wood found twelve feet below the surface of an ancient landslide on the Presumpscot River, Me., by Mr. E. S. Morse. Thirty-three specimens of stalagmites and stalactites from Fountain Cave, Missouri, by Mr. C. S. Lynch. Petrosilex and green stone porphyry from Cohasset, by Mr. W. S. Balch through Dr. C. T. Jackson.

MINERALOGY. Over one hundred specimens of minerals and rocks, by Dr. H. I. Bowditch. Two specimens of Graphite from Ticonderoga, N. Y., by Mr. Michael Snow. Twenty-six specimens of minerals from Rideau Lake, C. W., by Dr. C. T. Jackson. A specimen of specular iron ore from Lubec, Me., by Mr. C. Stillwell. A cut glass cruet-stopper with its central cavity partly filled with water from a recent fire in Boston, by Mr. Thomas Gaffield.

Mr. Edward Pickering presented the following report of the Treasurer for the past year:—

REPORT OF E. PICKERING, TREASURER,

ON THE

FINANCIAL AFFAIRS OF THE SOCIETY,

For the year ending April 30, 1869.

The Receipts and Expenditures for the year have been as follows:

Receipts.			
Dividends and Interest			$8,480.40
Curtis Fund Income			600.00
Pratt " "			585.00
Wolcott " "			799.49
Walker " " (one half.)			1,223.15
Annual Assessments			1,840.00
Admission Fees			130.00
Life Membership			100.00
Profit on sales of Stock			43.00
Total			$13,811.04
Expenditures.			
Museum Building and Furniture		$694.95	
Cabinet		1,417.71	
Library		279.97	
Memoirs and Publications	$7270.16		
Less receipts	1491.90		
		5,778.26	
Gas		168.29	
Fuel		439.75	
Repairs of Building		483.49	
Binding		1,674.06	
Lectures	$713.88		
Less receipts	204.00		
		509.88	
Faunal Map		418.15	
Smithsonian Institute Explorations		300.00	
Salaries and wages		6,156.85	
Insurance		375.00	
General Expenses		943.26	$19,639.61
Excess of Expenditures over Receipts			$6,828.57

The following is a statement of the Property of the Society, exclusive of the Cabinet and Library, which are not susceptible of a definite valuation.

Museum Building.		
Cost of Building and Furniture, per last Report . .	$136,030.19	
Expended during the year	694.95	
		$136,725.14
Bulfinch St. Estate Fund.		
Note secured by mortgage	$15,000.00	
84 Shares Tremont National Bank	10,122.00	
Cash	142.45	
		25,264.45
Courtis Fund.		
50 Shares Globe National Bank	$6,250.00	
35 Shares Philadelphia, Wilmington & Balt. R.R. Co.	1,827.50	
$400 U. S. 5-20 Bonds	425.00	
		8,502.50
Walker Fund.		
Notes secured by mortgage	$41,105.00	
26 Shares Tremont National Bank	3,133.00	
19 " Atlas " "	2,204.00	
Cash	797.49	
		47,239.49
H. F. Wolcott Fund.		
$6,000 Chicago and N. Western R.R. Co. 10's Bonds .		6,000.00
S. P. Pratt Fund.		
27 Shares Philadelphia, Wilmington & Balt. R.R. Co.	$1,407.63	
50 " Norwich & Worcester R.R. Co.	5,212.75	
10 " Webster National Bank	1,072.75	
6 " Boston " "	657.25	
Cash	121.94	
		8,472.32
General Fund.		
17 Shares Bates Manufacturing Co.	$2,040.00	
35 " Everett Mills	4,900.00	
30 " Hamilton Woolen Manuf. Co.	8,550.00	
1 " Lawrence Manuf. Co.	800.00	
80 " Washington Mills	9,600.00	
114 " Vermont and Canada R.R. Co.	11,400.00	
12 " Cocheco Manuf. Co.	7,200.00	
2 " Lowell Manuf. Co.	1,800.00	
4 " Laconia Manuf. Co.	4,400.00	
3 " Pepperell Manuf. Co.	3,000.00	
11 " Neptune Ins. Co.	1,760.00	
18 " Boston Ins. Co.	2,160.00	
$4,000 Vermont Cent. & Vermont & Canada R.R. Co.'s Bonds	4,290.00	
$10,000 Albany City Bonds	9,350.00	
$1,000 Chicago & N. Western R. R. Co.'s Bonds .	1,000.00	
95 Shares Michigan Central R.R. Co.	10,963.00	
50 " Ogdensb'g & Lake Champlain R.R. Pref. Stks.	5,162.75	
38 " Philadelphia, Wilmington & Balt. R.R. Co.	1,976.25	
20 " National Bank of Redemption . . .	2,465.25	
		92,817.25
Miscellaneous.		
Unsettled Accounts $24.43		
Cash 2,544.14		
	$2,568.57	
Less outstanding bills	177.86	2,390.71
Total value of Property April 30, 1869		$327,411.86
" " " 30, 1868		$340,710.79
Diminution of value the past year		$13,298.93

This apparent diminution is occasioned principally by a reduction to the amount of $9,356.00 in the estimated value of the manufacturing and insurance stocks received under the Walker bequest, by the expense of binding the pamphlets and periodicals which have accumulated for several years, and by the unusually large cost of the publications, including the Harris Correspondence, etc. The publication of this work, of which three hundred copies are still undisposed of, was authorized nearly six years ago by the Council, and has cost about $2,000. We receive in exchange for our Memoirs and Proceedings, the publications of Foreign Scientific Societies; and in this way the value of the library has been increased during the past year by the sum of, at least, five thousand dollars.

It should be observed that a large portion of the income of the Society cannot be applied to general purposes. One half of the income of the Walker Fund is not received by the Treasurer, or included in the above receipts, but is reserved as a prize fund for essays on subjects relating to Natural History, and for other special purposes. The income of the Wolcott Fund can only be used in the purchase of books; and that of the Pratt Fund is applicable only to the Conchological Department. Under an order of the Council, the Bulfinch Street Estate Fund, with its accruing income, is to constitute an accumulating Building Fund, and for this reason, such income also is not included in the receipts of the Treasurer.

All which is respectfully submitted,

E. Pickering,

Treasurer of the Boston Society of Natural History.

Boston, April 30, 1869.

Mr. T. T. Bouvé, on behalf of the Trustees, presented the following report on the Trust Funds of the Society for the past year: —

Dr. Thos. T. Bouvé, Chas. J. Sprague and Edward Pickering, Trustees, in account with the Courtis Fund of the Boston Society of Natural History. Cr.

1868. Sept. 26.	To Cash received for Interest on $10,000 St. Louis Bonds	$300.00	1868. Sept. 26.	By Cash paid to Edw. Pickering, Treasurer,	$300.00
1869. March.	" received for Interest on $10,000 St. Louis Bonds	300.00	1869. March 26.	" " " "	300.00
April.	" received for $10,000 St. Louis Bonds sold at $81 (it being thought best by the Trustees to invest in property not so readily transferable by delivery only, and less likely to cause loss by robbery) . .	8,100.00	April.	" paid for Stock, as follows:	
				" 50 Shares Globe Bank, at 125 . .	6,250.00
				" 35 Shares Phil. & Wil. R.R., at 52,	1,827.50
				" paid Treasurer balance cash . .	22.50
	[The Trustees intend to transfer from General Fund stocks to make this property again $10,000.]	$8,700.00			$8,700.00

Errors Excepted. Boston, April 30, 1869.

THOS. T. BOUVÉ,
CHAS. JAS. SPRAGUE, } Trustees.
E. PICKERING,

Memo., April 30, 1869. The property of this Fund consists on date, of	
50 Shares Globe Bank at 125	$6,250.00
35 Shares Phil. & Wil. R.R. at 52	1,827.50
U. S. Bonds $400 (Transferred from General Fund)	425.00
	$8,502.50

Annual Meeting, May 3, 1871.

The President in the chair. Thirty-nine members present.

Prof. Alpheus Hyatt presented the following report of the Custodian for the present year.

My predecessor, the distinguished entomologist, Mr. Samuel H. Scudder, held three offices, Custodian, Secretary and Librarian; these at the last annual election were divided, Mr. J. A. Swan being selected as Secretary and Librarian. This division places the Museum more especially in my charge.

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The fact that the Society had no declared policy attracted the attention of the Committee who settled the terms upon which I was to serve, and they requested me to draw up a plan of organization. This was done after consultation with various members of the Society, and the provisional plan laid before the Council was, in all its essential features, adopted; but at my own request, it will remain on trial until sufficiently tested by practical application. The general considerations, however, which furnished the groundwork of the principles therein laid down, have been sufficiently matured by our own experience and that of other scientific institutions, both at home and abroad, to be announced now.

The history of the Society shows that it is eminently a social organization, devoted to the cultivation and diffusion of scientific knowledge. This is plainly stated in the address of the first President, Mr. Greenwood, in 1833. The publications and museum were then considered as necessary parts of the design, the former as a means of self-culture and correspondence with distant institutions, and the latter, as the most suitable medium for diffusing knowledge among the people.

Though these objects have never been more minutely defined, they have since served as the ground-work of all the progressive changes in the administration of the Society. The experience of the past thirty years, however, shows the insufficiency of our means to cover the whole field, which a practical application of such general principles embraces. Even were this not the case and our funds larger than they are, it would still be necessary to remember that we are no longer solitary.

There are six other institutions in our vicinity, five of which have museums and are devoted to the cultivation of Natural History.

Coöperation in some definite form with them all is to be anticipated, and in fact has commenced between this Society

and the Museum of Archæology and Ethnology at Cambridge. The first step in this direction demands a thorough acquaintance with our present position and a complete definition of the future policy to be pursued. In this way, the Society will be ready for the consideration of any scheme of coöperation, and what is still more important, feel in the meantime that its expenditures, whether of money or labor, are distributed judiciously. Another reason for a definition of our plans lies in the fact that Societies are liable to sudden changes of policy and should, therefore, have some precise standard of comparison by which the value of each new measure can be judged.

The Society, as it is now constituted, has three well marked divisions,—the meetings, with their attendant publications, especially devoted to the use of the members; the Library, also for the use of the members, but to which, as to the meetings, all respectable applicants have ever been made welcome; and lastly the Museum and Lectures.

The effects of the meetings are too complex to be readily defined. It may be affirmed, however, that they secure mutual good understanding and support between professional men and amateurs, that they furnish to mature minds the most sympathetic of all audiences, encourage the hesitating student to take his first steps in the public service of science, and restrain the hasty and over-confident by the presence of critical judges. They also exercise a powerful influence upon the public at large, by means of the bi-monthly reports of the Secretary, published in the newspapers.

The publications are accessory to the meetings and add greatly to their attractions, besides maintaining creditably our part of the general correspondence now uniting all Natural History Societies and Institutions.

The principal object of the Library must necessarily be the preservation and systematic cataloguing of the books and pamphlets, but it has certain duties, also, in connection with the publications and the purchase of books, which need to be

definitely set forth. For instance, it is evident that the extension of our exchanges should be limited to Natural History periodicals, excluding all political, economical or technological serials, or those which are strictly antiquarian or historical, and do not publish occasional articles bearing upon the sciences of Anthropology and Ethnology.

Mr. Scudder directed his efforts principally to the publications, and to the establishment of a system of exchanges which now furnishes us with nearly all the best Natural History periodicals of the day. Every practical worker on Natural History in this vicinity, to a greater or less extent, reaps the benefit of his labor and admirable perseverance. The Museum, however, to which we now turn, has not received so much attention, and the principles to be adopted in its arrangement require more careful consideration.

The collection in the department of Ornithology is the scientific ornament of the Museum, and it contains numbers of original specimens, whose value to the investigator can hardly be over-estimated. Such collections should be regarded as scientific trusts, which an enlightened policy will not only preserve with the greatest care, but increase for the benefit of posterity.

The situation of this Society obliges us to consider as perhaps the most important part of our duties, the gradual accumulation of a full and complete collection of the animals and plants, fossil and living, as well as the minerals of New England, especially those of our own State.

On the other hand, there are certain special departments, which it would not seem necessary to enlarge beyond the reasonable limits of educational collections. Thus, for example, the Botanical, Anthropological and Ethnological collections at Cambridge and Salem are extensive, and it would be a waste of means to duplicate them.

The relations of the Society to the public, require that the Museum should be made instructive to all visitors seeking either general information or amusement. The initial

labor of awakening a desire for knowledge in the minds of the public, by the exposition of curious specimens, is approaching completion, and even the most ignorant are in some measure prepared to respect any attempt to offer them more solid, intellectual entertainment. The students of the neighboring Institute of Technology and the teachers and pupils of our public and private schools form another important class to whom our collections are useful. These, as well as the public, require such a classification of the specimens as will convey a knowledge of general laws and principles unencumbered by details. Careful pruning of the specimens on exhibition, the concealment of all others in convenient depositories, and the strict limitation of the purchase of specimens to typical forms, are the only means by which we may hope to avoid the accumulation of unsuitable material. The Ornithological and New England collections must be necessarily cumulative, but with correct management may be made subservient to the illustration of general principles without injury to their scientific value. When distributed in faunal groups they can be used to demonstrate certain laws and principles which cannot be explained by the more comprehensive zoological and anatomical portions of the Museum.

These conclusions were thought by many of the most experienced members of the Society, to afford a correct foundation, and in accordance with them a series of practical rules was drawn up and provisionally adopted. With regard to the Meetings, Publications and Library, these rules were substantially the same as those principles which have just been recommended, but in the Museum they were much more minute.

The governing principle proposed for this department was that all the different collections should form together a consecutive series of lessons in the structure of the earth and in the organization of animals and plants. To accomplish this, only such specimens should be exhibited as would prominently represent some definite step in the morphological or

structural series, in each class or minor division of the animal and vegetable kingdoms. Besides these it was proposed to have a more general epitome collection which would enable the student to bind together in one sheaf all the knowledge he might have obtained from the type collections. Though we are apparently far from the final accomplishment of this or any other arrangement, yet the existence of a definite system exerts an excellent and healthy influence.

The difficulties to be encountered in carrying out the details of any scheme will be great or small, precisely in proportion to the feeling which governs the officers entrusted with its execution. If a broad, catholic spirit of consideration for the interests of the Museum obtains, there need be no doubt of ultimate success. On the other hand, if regard for the interests of any special departments is allowed to interfere with the uniform arrangements and proper scientific use of the whole Museum, no very beneficial results can be anticipated. It should be remembered, and therefore make us doubly cautious, that besides our own interest in the matter, the result of such an experiment must become a precedent for similar undertakings, and in the future have a lasting influence upon the development of scientific societies.

The next important event of the year was an agreement made with the Massachusetts Institute of Technology. By the terms of this compact they are permitted the use of the halls of this building and the Museum collections for the instruction of students, controlled by such restrictions as may from time to time be imposed by the Council. In return for these privileges, the Institute pays a certain sum per annum, and deposits, as soon as we are prepared to receive them, the valuable collections and series of diagrams which formerly belonged to Prof. Henry D. Rogers.

This agreement affords the Society an opportunity to aid in the new movement of practical education and to extend its usefulness to a class heretofore beyond its reach,—a class likely, on account of their opportunities in the field and laboratory, to

be of great service to Natural History. This year the coöperation has extended no farther than to the delivery of a few lectures in this Lecture Room, upon Zoölogy, by Dr. S. Kneeland, and a course upon Palæontology by the Custodian.

One of the principal items of expense has been the new heating apparatus. The old cast iron boilers were entirely unfitted for their purpose, and great consumers of coal. These, owing to the exertions and management of the President and Mr. W. T. Brigham, have been replaced by tubular boilers, and also new heating apparatus throughout the building, which has so far worked satisfactorily. The expense of this change—some four thousand dollars, has borne heavily upon all sections of the Museum. Notwithstanding this, however, a well marked advance in the amount of work done in this division is apparent.

The appointment of Mr. F. G. Sanborn as Instructor at the Bussey Institution of Harvard University, withdraws him only to a limited extent from his labors here. Two mornings of each week are occupied by the duties of this office, and the proportional deduction which he personally offered to make from his salary, has enabled us, with the addition of a small sum from the general income of the Society, to employ the whole time of another valuable assistant, Mr. Philip S. Sprague. Mr. Sanborn's almost constant occupation in the general work of the Museum prevents him to a great extent from paying that constant attention to the Entomological collections which their preservation demands.

Mr. Sprague, however, who has been at work for two months past, with the aid of the closely fitting boxes recommended by Dr. Hagen, will, it is hoped, place this collection out of danger.

I desire also to draw special attention to the report on Comparative Anatomy. This shows the unusual activity which has prevailed in that department, and the results are highly creditable to the gentlemen who have worked upon the collection. This, and the reports on Mollusca and En-

tomology, teach us the necessity of securing as early as possible the services of qualified assistants in all departments. Several sections of this Museum, if properly attended to, would require every year as much labor as has been gratuitously expended during the past twelve months upon the Osteological collection alone.

The remainder of this report is compiled from the special reports of the Secretary and Librarian and the Chairmen of the various Committees on the Museum.

LECTURES.

Through the liberality of the Trustees of the Lowell Institute, seven courses of free lectures have been given by the Society. The first course of six lectures, by Rev. John L. Russell, on Cryptogamic Botany, was attended by an average of eighty-five persons; the second course of two lectures, by Prof. J. S. Newberry, on the Cañons of the Colorado and Ancient Civilization of America, by an average of two hundred and eighty-seven persons; the third course of six lectures, by Thomas Dwight, Jr., M. D., on the Comparative Anatomy of Mammalia, by an average of sixty-one persons; the fourth course of four lectures, by Dr. P. P. Carpenter, on a general sketch of Mollusca, by an average of sixty-one persons; the fifth course of two lectures, by Rev. R. C. Waterston, on the Journey across the Continent, or some of the remarkable features of California, by an average of three hundred and thirteen persons; the sixth course of twelve lectures, by W. H. Niles, on the Principles of Geology, by an average of two hundred and thirty-seven persons; the seventh course of six lectures, by Rev. E. C. Bolles, on the Revelations of the Microscope, by an average of two hundred and seventy-nine persons.

These averages indicate, generally, the difference in the public mind between popular and strictly educational lectures, but the extreme severity of the weather during the courses

of Drs. Dwight and Carpenter, must be taken into consideration.

Summing up the result, it may safely be said that the courses have been successful; the character of the lectures and the interest manifested in them indicate that the Society can exercise an influence as an educator, while, at the same time, by the natural reaction of that influence, it will increase its own strength.

This success is mainly attributable to the management and exertions of the Secretary. This gentleman, besides attending at the Library much longer every day than his agreement with the Society demanded, was present at nearly every lecture, looking personally to the comfort of the audience.

MEETINGS.

Six corresponding and forty-eight resident members have been elected during the year. Of the resident members, three have not completed their membership according to the requirements of the Constitution, and their names do not appear on the records.

There have been eighteen general meetings of the Society, with an average attendance of forty-one persons; eight meetings of the Section of Microscopy, with an average attendance of eleven; seven meetings of the Section of Entomology, with an average attendance of ten. Thirty-seven written communications have been made by twenty-six persons, and eighty-nine verbal communications by thirty-six persons, making a total of one hundred and twenty-six. Of these, thirteen were presented in the Section of Entomology, and thirteen in the Section of Microscopy. Their titles are as follows:—

AGASSIZ, ALEX. On the formation of fiords. *December* 7, 1870.

ATWOOD, N. E. On the habits of the Bluefish. *January* 18, 1871.
Remarks on the habits of the Capelin (*Mallotus villosus*). *March* 1, 1871.

BICKNELL, E. On a Method of producing Low Powers for the Microscope. *October* 12, 1870.

On Flexible Muscular Preparations. *November* 2, 1870.

On the Absorptions of the Frustules of *Isthmia*. *November* 9, 1870.

On the Structure of Whalebone. *November* 9, 1870.

Remarks on Microphotographs of *Amphipleura pellucida* and *Surirella gemma*, taken by Dr. Woodward, U. S. A. *February* 8, 1871.

Remarks on the Sense of Smell, as the guide of many lower animals in seizing their prey. *April* 5, 1871.

BLISS, RICHARD, JR. On the Osteology of Structure of the dorsal fin of *Doras*. *June* 15, 1870.

On markings which distinguish young from adult fishes. *January* 18, 1871.

BOUVÉ, T. T. On Conglomerate. *October* 19, 1870.

BREWER, T. M. On the Nest of the Baltimore Oriole, made of Spanish Moss. *May* 18, 1870.

On the Nests and Eggs of some of the most rare Birds of high latitudes. *February* 1, 1871.

Remarks on *Casuarius Bennettii*. *March* 1, 1871.

On the Varieties of the Crow-Blackbird. *April* 19, 1871.

BRIGHAM, WM. T. On Meteorites from Tucson, Arizona. *May* 18, 1870.

On a deposit of Lava on the Columbia River. *May* 18, 1870.

On the *Sequoia gigantea*. *May* 18, 1870.

On *Morchella* from Grafton, Mass. *May* 18, 1870.

On the System of Volcanoes in Mexico. *February* 15, 1871.

On Water as an element of Volcanic Eruptions. *February* 15, 1871.

Remarks on a Conglomerate Lava in one of the Hawaiian Islands. *February* 15, 1871.

BROWN, F. H. On Ferns and Fern Allies of Medina and Porto Santo. *May* 18, 1870.

BURBANK, L. S. On the Origin of the Eozoonal Limestone of Chelmsford and vicinity. *April* 19, 1871.

BURGESS, EDWARD. On Dr. Hagen's Collections of Neuroptera. *May* 25, 1870.
On the Anatomy of *Darapsa myron*. *December* 28, 1870.
On the Genital Armature of male Lepidoptera. *January* 25, 1871.

CARPENTER, P. P. On the Family of Chitons. *January* 4, 1871.

CLARK, HENRY JAMES. On the Anatomy and Physiology of our common *Lucernaria*. *February* 1, 1871.

COPE, E. D. On Three New Species of *Pythonomorpha*. *November* 2, 1870.

DALL, W. H. On Arrangement of the order *Docoglossa*. *October* 19, 1870.
On the Relations of the class Brachiopoda. *February* 15, 1871.

DWIGHT, THOMAS, JR. On flexible anatomical preparations, *October* 5, 1870.
On Supernumerary Limbs in Fowls. *October* 5, 1870.
On Supernumerary Limbs of Fowls. *January* 4, 1871.

EDWARDS, A. M. Notice of an Undescribed Form of *Pleurosigma*; family *Diatomaceæ*. *April* 5, 1871.

EMERTON, J. H. On *Myrmeleon immaculatum*. *December* 28, 1870.
Remarks on the Structure of Spiders. *January* 25, 1871.

FARLOW, W. G. On the Marine Algæ of the east coast of the United States. *December* 7, 1870.

FONTARIVE, E. On a new stand for the Microscope. *March* 8, 1871.

GREENLEAF, R. C. On an infusion of mutton which showed molecular motion. *January* 11, 1871.

HAGEN, H. A. On the Deyrolle Collection of *Curculionidæ*. *November* 23, 1870.

HARRIMAN, G. B. On the Fibrous structure of Bone. *December* 14, 1870.

HUNT, T. STERRY. On certain features of the Geology of New England. *October* 19, 1870.

HYATT, A. On the Classification of Brachiopoda. *June* 1, 1870.
On Preservative Fluids. *October* 5, 1870.
On the Law of Acceleration in the development of certain types of animals. *October* 5, 1870.
On Revisions among the Ammonites. *October* 5, 1870.
On the Embryology of Nautiloids. *November* 9, 1870.
On Comparison of Soundings of East and West North American coasts. *November* 16, 1870.
On the Elevation and Depression of portions of the Atlantic coast. *February* 1, 1871.
On the affinity of the Polyzoa and the Brachiopoda. *March* 15, 1871.
Remarks on Natural Selection. *April* 5, 1871.

JACKSON, C. T. On Meteorites. *May* 18, 1870.
On Lingula. *June* 1, 1870.
On an Analysis of the Rocks in the vicinity of Boston. *October* 19, 1870.
On Glacial and Drift Phenomena. *December* 21, 1870.
On the Elevation and Depression of the Atlantic coast. *February*, 1871.
On some Peculiarities of Volcanic Action. *February* 15, 1871.

JACKSON, J. B. S. On Anatomical Preparations. *October* 5, 1870.

JEFFRIES, B. JOY. On the Absence of Color-Perception in Animals. *April* 5, 1871.

KNEELAND, S. On Optical Illusion. *November* 2, 1870.
On the Geology and General Features of the country about the upper Mississippi. *November* 16, 1870.
On the mechanical action of Sand driven by a blast of air or steam. *April* 15, 1871.
On the Habits of Flying-fish off the Pacific Coast. *March* 15, 1871.
On the Habits of some of the Pacific Water-birds. *March* 15, 1871.

KNIGHT, C. F. On the Turtles of Florida. *June* 15, 1870.

MAACK, G. A. On the Geology of the Argentine Republic. *June* 1, 1870.

MANN, B. P. On Carbolic acid as a Preservative fluid. *June* 15, 1870.

MINOT, C. S. On the Flight of Diurnal Lepidoptera. *October* 26, 1870.

On *Lycæna* occurring in New England. *November* 23, 1870.

Remarks on new Lepidoptera of Iowa. *January* 25, 1871.

MORSE, E. S. On reclassification of the Brachiopoda. *June* 1, 1870.

On the Sipunculoid worm *Phascolasma*. *November* 16, 1870.

On the Relations of the Brachiopoda. *March* 15, 1871.

Remarks on some features common to the Vermes and the Vertebrates. *March* 15, 1871.

On the Early Stages of the Shell of *Anomia*. *April* 5, 1871.

Observations on the protective coloration of Mollusca. *April* 5, 1871.

NILES, W. H. On the System in the Physical features of Massachusetts. *May* 18, 1870.

On the Conglomerate passing into Porphyry at Dedham. *October* 19, 1870.

Observations on a Gneiss Quarry at Monson, Mass. *January* 4, 1871.

On the Parallelism between the Atlantic Valley and the Appalachian Chain. *February* 1, 1871.

On the Conglomerate Pebbles at Montague. *February* 15, 1871.

On Lateral Change in a bed of Conglomerate at Chestnut Hill. *February* 15, 1871.

PACKARD, A. S., JR. Catalogue of the *Phalænidæ* of California. *May* 4, 1870.

On new and interesting Neuroptera. *May* 4, 1870.

On the Embryology of *Isotoma*. *June* 15, 1870.

On the Embryology of *Limulus Polyphemus*. *November* 16, 1871.

On a new species of *Pauropus*. *November* 16, 1870.

PERRY, J. B. On the Glacial period in New England. *December* 7, 1870.

On Glacial action and drift phenomena. *December* 31, 1870.

On Gradual Changes of Strata, caused by variations of temperature. *January* 4, 1871.

On Drift Phenomena. *January* 18, 1871.
On the formation of the Atlantic Coast line. *February* 1, 1871.
On the Presence of fossil Brachiopods in the primordial rocks. *March* 15, 1871.
Remarks on Eozoon in some quarries of Massachusetts. *April* 19, 1871.

PICKERING, C. On *Lingula* at the Feejee Islands. *June* 1, 1870.
On the Drift in the vicinity of Salem. *January* 18, 1871.
An Illustration in the Hawaiian Islands of water maintained at the surface of the globe by central heat. *February* 15, 1871.
Remarks on the character of the eruptions of Kilauea and Mauna Loa. *February* 15, 1871.
On the General Distribution of the Conglomerate, and its formation. *February* 15, 1871.

POURTALES, L. F. DE. On deep sea soundings off the east coast of the United States. *November* 16, 1870.

PUTNAM, F. W. On Mr. Bliss's communication. *June* 15, 1870.
On the Turtles presented by Mr. Knight. *June* 15, 1870.
On an Eel, from the coast of Africa, containing a large, spiny, bream-shaped fish. *March* 1, 1871.
On the Classification of Fishes. *April* 19, 1871.

RICHARDS, L. S. On stones marked with glacial scratches, taken from Fort Hill. *April* 5, 1871.

SANBORN, F. G. On the capture of interesting Lepidoptera at Milford, N. H. *May* 25, 1870.
On Lepidoptera from California. *October* 26, 1870.
Remarks on habits of *Forficula*. *January* 25, 1871.

SCEVA, GEORGE. On the habits of the Cobra di capello. *January* 18, 1871.
On the absence of the third molars in Hindoo skulls. *March* 1, 1871.
On the poison of the Cobra and of the Rattlesnake. *March* 1, 1871.

SCUDDER, S. H. On Mr. Morse's Classification of the Brachiopoda. *June* 1, 1870.

SHALER, N. S. On the Progress of Life on the several continents. *June* 15, 1870.

On the Geological Structure of the Wachusett range. *June* 15; 1870.

On Stratification at Braintree. *October* 19, 1870.

On Roxbury Conglomerate. *October* 19, 1870.

Changes on the Atlantic Coast, and denuding action of Ice. *November* 2, 1870.

On the life of lower latitudes passing further north. *January* 18, 1871.

On the Chesapeake Bay and the shore line thence southward. *February* 1, 1871.

SPRAGUE, P. S. On Parasitic Insects. *October* 26, 1870.

STODDER, C. On a section of Tiger wood from Brazil. *May* 11, 1870.

On Albumen coagulated with carbolic acid. *October* 12, 1870.

On a series of lenses constructed by R. B. Tolles. *January* 11, 1871.

TUTTLE, A. On a form of *Paramœcium* from Fresh Pond. *November* 9, 1870.

On the Fissiparous reproduction of *Stentor*. *February* 8, 1871.

UHLER, P. R. Notice of some Heteroptera in the collection of Dr. T. W. Harris. *February* 1, 1871.

WATERSTON, R. C. On a visit to California. *November* 16, 1870.

WILDER, BURT G. On Intermembral or Limb Homologies. *April* 5, 1871.

WINSLOW, C. F. On a mortar-shaped pebble from the banks of the Rhine. *October* 5, 1870.

At the beginning of the year, a committee was appointed to look after the general meetings and solicit the proper kind of communications. The list above and the larger average attendance show a decided improvement resulting from this measure.

PUBLICATIONS.

The radical changes made in the basement during the summer and autumn have materially impeded the regular issue of the publications. Eleven signatures of the Proceedings have been issued, completing the thirteenth volume, and four signatures of the fourteenth volume are already in type. One paper of the Memoirs, "Historical Notes of the Earthquakes of New England," by Mr. William T. Brigham, has already appeared; the second paper, "Early Stages of Terebratulina," by Prof. Edward S. Morse, is ready, and only waiting for the plates; the third paper, on the "Osteology and Myology of Didelphys Virginiana," by Elliott Coues, M. D., U. S. A., with an appendix by Prof. Jeffries Wyman, M. D., is well advanced and will soon be issued, completing the first annual part of the second volume.

There is now a fair prospect that both the Proceedings and Memoirs will be issued with the promptness which has hitherto characterized the publications of the Society.

LIBRARY.

The accessions to the Library during the year by gift, exchange and purchase, number 1185, which may be classified as follows: 215 volumes, 765 parts of volumes, 183 pamphlets and 22 maps and charts.

The disturbed state of the countries from which many of the exchanges come will suggest the cause of this reduced number compared with that of the preceding year.

The appeals made to societies for volumes and parts to complete our imperfect series, have in several instances been responded to very generously. From the Zoölogical Society of London, we have received the first five volumes of its Transactions nearly complete. Two or three parts being out of print could not be supplied.

Several societies to whom our Memoirs, Proceedings and occasional papers have been sent, have for the first time honored us with their publications.

From the Gesellschaft von Freunden der Natur-wissenschaftlichen at Gera, we have received ten parts; from the Gesellschaft für Natur und Heilkunde at Dresden, six parts; from the Naturhistorische Verein, at Passau, eight parts; from the Museum of Economic Geology and Geological Survey of Great Britain, Vols. 1–3 of its Memoirs, together with several valuable volumes of local Geology.

We have opened correspondence with one new Society: the Verein zur verbreitung naturwissenschaftliche Kenntnisse, in Wien. Seven volumes of its publications have been received, and portions of our own have been sent in exchange.

Many of the series, and often those most called for, are incomplete, and much complaint is made because a desired part or volume is wanting. The librarian would recommend that at least the more valuable of these imperfect sets be filled out, since the value of a library often depends more upon its completeness than upon the number of the titles in its catalogue.

The librarian also represents that the alcoves in the gallery assigned to the publications of Societies, are overcrowded. He would therefore recommend that, as soon as practicable, galleries be placed in the back room and furnished with a number of cases sufficient to receive the books belonging to "A Republican Institution." The removal of these from their present position would give ample space.

There are several hundred parts of volumes and pamphlets which have been classified during the last year, but not yet properly incorporated into the library. There is also considerable work to be done in re-arranging the catalogue, owing to the removal of books from one alcove to another, a work on which the assistants have for some time been diligently employed and which still remains to be done. The librarian believes this can be entirely completed during the comparative leisure of the summer months.

The number of members who have taken books from the

library and the number of books loaned, correspond very nearly with the statistics of the preceding year.

The use of the library has been given to the members of the Institute of Technology and to others, who pursuing some branch of natural science, have made personal or written applications for the favor.

We have again to express our indebtedness to the officers of the Smithsonian Institution, for the uniform courtesy and liberality with which they have gratuitously transmitted our own publications and received for us those of foreign societies.

MINERALOGY.

The mineralogical department is indebted to Messrs. J. Carson, N. H. Bishop, A. K. Cole, W. T. Tracy and Dr. S. Kneeland, for interesting specimens. Addrtions have also been made by exchange, and a fine series, including many rare species, has been acquired by purchase. The collection is reported by the Committee to be in perfect condition, well arranged, and every specimen properly labelled.

GEOLOGY.

This department is reported to be, as formerly, fully arranged and labelled. No additions of special importance that need to be mentioned.

BOTANY.

The Herbarium in the Department of Botany has been carefully examined and rearranged according to the Genera Plantarum of Hooker and Bentham, so far as it has been published. This is in continuation of the work begun by the late Horace Mann.

Some 25,000 specimens in all have been labelled and glued to papers, and many hundred duplicates separated for exchange. The Herbarium now contains no loose plants, and is wholly free from insects. The cases, however, are unsuitable

for their purpose and do not even exclude the dust, which damages the collections.

Many hundred specimens from various expeditions are labelled simply with numbers, and where the Reports have not been published, would require much work for their correct identification. This, however, should be done and the assistance which is necessary should be obtained, since the specimens are very valuable in themselves, but of no avail in their present unnamed condition. An appropriation of $150.00 would be desirable for this purpose.

A nearly complete copy of "The Flore Cryptogamique de la Belgique," has been presented by Mr. Andrews, of Boston. A few Hawaiian plants have been added to the Herbarium.

The Ingalls Collection of paintings now deposited with the Society, may be, it is hoped, retained permanently as the property of the Society, but at present the price asked by the owner is beyond our means.

PALÆONTOLOGY.

The specimens which have been accumulating for years past have been unpacked, partly identified, labelled and placed in the cases. A preliminary review of the whole collection has been completed, in order to determine the number and quality of the specimens, and the proper mode of arrangement to be adopted. During this review, some very valuable specimens which had been displaced were discovered and restored to their proper places. The best manner of mounting has also been considered and experiments made.

It is proposed to secure the specimens to wooden tablets by wire fastenings. The colors to be a light grey for the Silurian, a delicate, reddish brown for the Devonian, a shade of yellow or buff for the Carboniferous, a lighter blue for the Mesozoic, and a deeper shade of blue for the Tertiary and Post Tertiary.

COMPARATIVE ANATOMY.

The Committee found this collection in poor condition at the beginning of the year, and much time was expended in cleaning the specimens and cases. The sashes of the latter had been loosened and admitted the dust freely, but this to some extent has been corrected by a system of fastenings devised by Mr. Sanborn.

The whole collection is now in excellent order. The Society owes this to the exertions of Dr. Dwight and his assistant, Mr. Fletcher M. Abbott. The most important addition is the skeleton of a whale, the carcass of which was presented by Harvey T. Litchfield, Esq.

This skeleton is probably the most perfect in this country, and was secured to this Society for the small sum of $275.00. It is now in course of preparation, and will be described and mounted by Dr. Dwight. The Society owes the perfection of the skeleton principally to Mr. Sanborn's constant care of the carcass until the bones were safely secured in the building.

A skeleton of *Globicephalus melas*, common "black fish," of our coast, has been sorted out from a confused mass of bones with great labor, by Dr. Dwight, and is now mounted. The specimen referred to is over fifteen feet in length.

A collection of the disarticulated bones, or rather parts, of the skeletons of the representative forms of the mammalia have been preserved, mounted and placed on exhibition. This collection enables the student to compare the morphological relations of the anterior and posterior extremities in each type, and the general and special relations of the parts of the skeleton to each other throughout. Thus a visitor is able to observe either one single typical skeleton, standing vertically with all the parts slightly separated, but still sufficiently near to each other to show their dependence; or he may run his eye through the whole series, isolating some one

bone, and following it through all its more important modifications within the class.

Several alcoholic preparations have also been made.

A system of mounting upon painted tablets, recommended by Dr. Wyman, has been adopted with admirable results. For white objects like bones, blue is preferred, and the effect is far superior to the funereal appearance of the black tablets previously employed.

The Committee in their report, thank Mr. Abbott for the gratuitous services which he has so generously rendered.

RADIATA.

Mr. Sanborn has cleaned the cases and rearranged the corals and sponges, placing the whole upon black tablets, He also began the labelling of the species, but found that only about twenty per cent. had correct names. It is very important to this collection to secure, if possible, the services of Prof. A. E. Verrill, for the naming and labelling of the species. The gorgoniæ and sponges also should be mounted, so as to be safe from careless handling. Mr. Minot has begun the study of classification and anatomy of Echinoids, and the best mode of mounting and displaying this collection is now under consideration.

INSECTA.

Mr. Philip S. Sprague, though only employed for two months, has already arranged and placed in trays 160 species of the Curculionidæ, 206 species of the Cerambycidæ, and 199 species of Chrysomelidæ, 51 species of Coccinellidæ, 45 species of Endomychidæ — a total of 671 species. These are New England Coleoptera, and have been placed in the railing cases as part of the collection of N. American Coleoptera, begun and partially completed by Mr. Sanborn and Mr. G. D. Smith. The former generously placed his collection of Coleoptera at the disposal of Mr. Sprague, who has selected many species therefrom to fill blank spaces in the Society's

collections. The balance of the specimens consist of the duplicates of the Harris, the remnants of the Say and Hentz, Shurtleff and Stratton collections. Mr. Sanborn, despite the numerous demands upon his time, has continued the work of labelling and arranging the Lepidoptera.

The Society's entire collection of N. American Bombycidæ, largely increased by donations to supply deficiences from Messrs. Swan, Trouvelot, Sprague, Dickinson, Minot, and Sanborn, is now displayed in the railing cases, properly labelled and in good condition. Mr. Minot has devoted much time to the Phalænidæ and Noctuidæ during the year, and the arrangement and labelling of the former family is now nearly completed. The collection of Butterflies of New England has been increased by more than 40 specimens from Messrs. Scudder, Edwards, Whitney and others, several of these being more than usually valuable, as types of the plates in Mr. Scudder's forthcoming work; this department has also been relabelled throughout. Over 150 specimens of Lepidoptera, representing 53 species new to the collection, have been purchased from the collector, Mr. G. W. Belfrage, of Waco, Texas; some 20 species received in exchange from California, by Mr. R. H. Stretch, nearly 100 specimens of various orders from California, by Mr. William Holden, and a small lot of new and valuable diurnals from Tarma, Peru, by Mr. M. Moerner, have recently been presented. From Mr. Henry Edwards, of California, a large number of valuable Coleoptera, both dry and alchoholic, have been received in return for exchanges. From Mr. Nathaniel H. Bishop, a number of Cuban insects of various orders, and from Mr. Samuel N. Chamberlain, of Port Orange, Florida, alcoholic specimens of value, numbering over one hundred.

The Lepidoptera of the Sumichrast collection, received in envelopes and alluded to in our last report, have been entirely reset, and about twenty per cent. identified and labelled. More than half the duplicates of this collection, also including the Coleoptera, have been sold at remunerative

prices. A valuable collection of the Ants of Mexico, identified by Mr. Edward Norton, and presented early in the year by Mr. S. H. Scudder, comprising 27 species, represented by 86 specimens, has been labelled and placed on exhibition. Numerous specimens illustrative of habits, transformations, and structure, mostly alcoholic, have been added to the collection. The Myriapoda have been revised, and the North American species carefully identified by Mr. Edward Burgess, and 63 jars containing over 300 specimens, representing 45 species, are now labelled and on exhibition. The Scorpionidæ have also been determined by Mr. Burgess and are nearly ready for the cases.

The Harris collection has been repeatedly examined during the past year, the transfer of the Heterocerous Lepidoptera to the new cases accomplished, and the orders Diptera and Hymenoptera stored for safety in the recently purchased boxes, awaiting a careful transfer to their proper place in the cabinet. The Neuroptera of this collection, by vote of the Committee and consent of the Custodian, have been entrusted for comparison and identification to Dr. H. A. Hagen, of Cambridge, this gentleman having kindly offered to undertake the task.

The Committee feel that the plan adopted in the railing cases for the safety of the collection, having stood some four or five years' test, has proved an entire success, and that the new boxes recently procured after the pattern of those used at the Museum of Comparative Zoölogy at Cambridge, will obviate all danger of future damage from moths or anthreni. They would, however, again suggest that additional accommodation for the display of the specimens is required.

MOLLUSCA.

Notwithstanding the generous endowment of Miss Pratt, it has been found exceedingly difficult to obtain qualified assistance in this department. Dr. P. P. Carpenter, having been invited to lecture before the Society, his services were

secured, though for two weeks only. During this time he completed the preliminary work of unpacking the accumulations of the last five years and made a temporary arrangement of the shells into families and genera.

The whole collection is now in the cases, and as a large portion is already mounted, there remains only about one-half still in an unfinished state. This very largely consists of duplicates, and, as suggested by Dr. Carpenter, the next step to be taken is to compare the species with our named collection, pick out all the duplicates and make up sets for distribution and exchange. The Amboyna mollusca, collected by Mr. Albert S. Bickmore, are exceedingly valuable, as they furnish us with alcoholic specimens of many Eastern species. Our collection of shells without the addition of specimens in alcohol, from which dissections and examinations of the animal may be made, is comparatively valueless.

Dr. Carpenter also looked over, arranged, and hastily named a small collection of Chitons, also the shells of Guatemala and Cape Flattery, as well as the genera and a considerable proportion of the species of the East India shells which had not been named and mounted previously by Prof. E. S. Morse.

Mr. L. Lincoln Thaxter has continued the New England collection, partly completed and mounted by Prof. E. S. Morse. About fifty species have been added and the whole transferred to a table case where it can be more readily studied. It is intended to illustrate the last edition of "Gould's Invertebrata."

Mr. Arthur Smith has also been employed in sorting out and studying certain portions of the collection.

FISHES AND REPTILES.

The Custodian has received no report from the Chairman of this committee. Mr. Putnam has named over three hundred species of fishes and the labelling is nearly completed. The collection is very small, and though in good condition,

as far as it goes, its incompleteness is not creditable to the Society. We are deficient in representatives of the larger fishes of our coast, and it is to be hoped that a decided improvement in this respect may soon take place.

The Reptilia, which were arranged last year, remain in about the same condition. This collection, also, is very small and needs many additions.

ORNITHOLOGY.

There has been the usual activity in this department. Dr. T. M. Brewer has obtained several important additions — one donation from Mr. Thure Kumlein, of several very rare specimens, including the *Erismatura dominica*, from Wisconsin, and a lot from the same gentleman purchased by the Society. Another from the Smithsonian Institute contained an exceedingly valuable series of the nest and eggs of Arctic birds. Other additions will be found in the list of donations.

The Brazilian skins of Dr. Bryant's collection, about 200 species, have been arranged, labelled and catalogued, by Dr. Brewer, all the doubtful species being referred to Dr. Geo. N. Lawrence, of New York. The Guatemalan skins purchased from Mr. Van Patten, have been received and are now being named.

The Custodian has turned his personal attention more especially to the Birds, this being by far the most valuable collection in the building and most likely to suffer from neglect. In order to stop the ravages of anthreni, many expedients have been adopted. Naphthaline has been largely used, but entirely without success. In fact, the use of any such "vade mecum" is often worse than nothing at all, since it leads the persons in charge to place confidence in its apparently favorable effect, and leaves the insects an open field to work in. The birds on the lower shelves alone have become infected, the beetle does not seem to rise above these as long as there are any skins unattacked below. Several expedients have been resorted to, but nothing is apparently so effectual

as constant work. I have had every bird soaked in benzine or C. Naptha, and Mr. Arthur Smith has been employed several hours of nearly every day in this labor, going over and over the collection several times. The results are encouraging. It is found that the Anthreni are confined to a few badly infected birds and decrease in number at each application. Notwithstanding the certainty that the beetles can be exterminated with our present system of constant supervision, the necessity of adopting some better method of preservation is very evident.

The cases are not fitted by their construction either for containing the birds or for preserving them. Mr. Sanborn has devised several ingenious modes of stopping the cracks and stuffing the sashes, but as soon as one is caulked another opening makes its appearance and opens a new road for the incursions of these minute pests.

A catalogue of the birds has been begun, and the work partially completed for the gallery of Water Birds.

MAMMALIA.

This department, hitherto the poorest in our Museum, is rapidly improving.

A collection of the mammals of New England had been commenced this year and was progressing favorably, though slowly, when we received a donation of one thousand dollars from the estate of the late Mr. Sidney Homer. The Council appropriated this entirely to the purchase of New England mammals and thus secured the completion of this portion of our Museum. Mr. J. A. Allen has purchased several species from Mr. Rich, of Maine, and another lot from Mr. Maynard, of this State. Among them are a fine pair of Otter skins from Maine, and a remarkably fine specimen of Pine Marten. A pair of foxes obtained from Mr. S. Jillson, also might be noticed on account of their fine appearance, and especially the dark color of the throat and breast of one of them. The collection has been named, labelled, and catalogued and

placed on exhibition, by Mr. Sanborn, in the wall cases on the east side of one of the north-west rooms. As these cases are needed for the osteological collection, it will soon become necessary to provide others for the reception of the skins.

MICROSCOPY.

The material in this department has not been increased by any very important donations during the past year.

ANNUAL REPORT.

The first event of the past official year was of a most affecting and melancholy character.

The Rev. J. A. Swan, Recording Secretary and Librarian, whose term of service endured but little over a year, died after a short illness on the 31st of October, 1871. The Society has never before, I believe, parted from one of its officers under circumstances which appealed so strongly to the sympathy of all its members. Though not possessed of a strong constitution, Mr. Swan was gifted with a singleness of purpose and the spirit of work to a degree which I have rarely seen equalled. His devotion to the interests of science and to the purposes of this Society, induced him to tax his physical powers far beyond the safe limits of endurance. This brought on the disease from which he had previously suffered, in an aggravated form, and deprived him of the means of resisting its ravages. Suffering and pain never interfered with the performance of his official duties, and we all remember the courteous and almost affectionate interest with which he assisted every one.

These rare qualities made him deservedly popular with the members of this Society, and endeared him to its officers, who mourned his death rather as friends parting from a dear friend, than as associates losing the companion of only a year's standing.

Soon after this sad event Mr. F. G. Sanborn was elected as temporary Secretary and Librarian, and continued to perform

the duties of this double office until the election of Mr. Edward Burgess, the present incumbent. This necessarily withdrew Mr. Sanborn from his position as Assistant in the Museum, and from the care of the Entomological Department for four months.

The publications have fallen behindhand on account of these various changes, and other reasons explained in my previous report, but they are, owing to the energetic management of the present Secretary, now being rapidly advanced.

The Teachers' School of Science was conceived, and has been carried into successful operation during the past winter under the patronage of Mr. John Cummings, a well known member of this Society.

After this gentlemen had pledged himself to the support of this undertaking, a Committee was appointed, consisting of Mr. John Cummings, the President, Prof. W. H. Niles and the Custodian, to take the matter in charge. This Committee have not yet prepared a Report, but appended to this Annual Report will be found as full an account of the early history of their operations as has yet been published.

Under the direction of the Committee, courses of lessons have been given on Physical Geography, by Prof. W. H. Niles, on Mineralogy, by Mr. W. C. Greenough, and on Zoology by the Custodian. The last course on Botany, by Dr. W. G. Farlow, of Cambridge, is now in progress. When this is finished there will have been thirty-three lessons given. The courses have been almost wholly tentative and experimental, but the success already attained has been most encouraging.

Prof. W. H. Niles delivered the first six. He undertook to give the more general features of the earth's surface, and then to apply these general principles to the explanation of the physical characteristics of Massachusetts. The success of this course may be judged by the average attendance, which was about six hundred teachers of all grades, and by the fact that the methods of teaching Geography in some of our public

schools are now undergoing a change in favor of the more natural method introduced by him.

The necessity of actually handling and dissecting specimens obliged the Committee, after consultation with the Masters of the public schools, to confine the issue of tickets to about two for each school. This limited the average attendance at the succeeding lessons, six on Mineralogy by Mr. Greenough, and eleven on Zoology by the Custodian, to about fifty-five. The Masters and sub-Masters of the public schools have been present in large numbers, and I have noticed the same faces at every lesson, earnest in their work, and often remaining after the close of the discourse in order to gain fuller information. Specimens were distributed and studied at every lesson, and we know that in many instances the instruction was repeated at the schools.

We have, beyond a doubt, excited an interest in Natural History which must speedily effect a marked improvement in the system of public instruction in Boston, and eventually spread its influence to other parts of the country. The Committee feel that much of their success is due to the assistance they have received from Mr. Page, the Chairman of the Committee of Masters, Mr. Philbrick, the Superintendent of the Public Schools of Boston, and Prof. Runkle, the President of the Institute of Technology, who obtained from the Board of Government of that Institution the use of their new and commodious hall, which was opened for the first time at our first lesson. The materials for the course on Zoology could not have been gathered in sufficient abundance if it had not been for the extraordinary facilities for collecting Marine animals afforded the Custodian by Prof. S. F. Baird, U. S. Commissioner of Fisheries. Those for the course on Botany were furnished with equal readiness and generosity by Prof. Asa Gray, from his Botanical Garden in Cambridge. In fact, men of purely scientific tastes have everywhere manifested the deepest interest in our project, and given all the aid that was asked for by the Committee.

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The publications have fallen behindhand on account of these various changes, and other reasons explained in my previous report, but they are, owing to the energetic management of the present Secretary, now being rapidly advanced.

The Teachers' School of Science was conceived, and has been carried into successful operation during the past winter under the patronage of Mr. John Cummings, a well known member of this Society.

After this gentlemen had pledged himself to the support of this undertaking, a Committee was appointed, consisting of Mr. John Cummings, the President, Prof. W. H. Niles and the Custodian, to take the matter in charge. This Committee have not yet prepared a Report, but appended to this Annual Report will be found as full an account of the early history of their operations as has yet been published.

Under the direction of the Committee, courses of lessons have been given on Physical Geography, by Prof. W. H. Niles, on Mineralogy, by Mr. W. C. Greenough, and on Zoology by the Custodian. The last course on Botany, by Dr. W. G. Farlow, of Cambridge, is now in progress. When this is finished there will have been thirty-three lessons given. The courses have been almost wholly tentative and experimental, but the success already attained has been most encouraging.

Prof. W. H. Niles delivered the first six. He undertook to give the more general features of the earth's surface, and then to apply these general principles to the explanation of the physical characteristics of Massachusetts. The success of this course may be judged by the average attendance, which was about six hundred teachers of all grades, and by the fact that the methods of teaching Geography in some of our public

schools are now undergoing a change in favor of the more natural method introduced by him.

The necessity of actually handling and dissecting specimens obliged the Committee, after consultation with the Masters of the public schools, to confine the issue of tickets to about two for each school. This limited the average attendance at the succeeding lessons, six on Mineralogy by Mr. Greenough, and eleven on Zoology by the Custodian, to about fifty-five. The Masters and sub-Masters of the public schools have been present in large numbers, and I have noticed the same faces at every lesson, earnest in their work, and often remaining after the close of the discourse in order to gain fuller information. Specimens were distributed and studied at every lesson, and we know that in many instances the instruction was repeated at the schools.

We have, beyond a doubt, excited an interest in Natural History which must speedily effect a marked improvement in the system of public instruction in Boston, and eventually spread its influence to other parts of the country. The Committee feel that much of their success is due to the assistance they have received from Mr. Page, the Chairman of the Committee of Masters, Mr. Philbrick, the Superintendent of the Public Schools of Boston, and Prof. Runkle, the President of the Institute of Technology, who obtained from the Board of Government of that Institution the use of their new and commodious hall, which was opened for the first time at our first lesson. The materials for the course on Zoology could not have been gathered in sufficient abundance if it had not been for the extraordinary facilities for collecting Marine animals afforded the Custodian by Prof. S. F. Baird, U. S. Commissioner of Fisheries. Those for the course on Botany were furnished with equal readiness and generosity by Prof. Asa Gray, from his Botanical Garden in Cambridge. In fact, men of purely scientific tastes have everywhere manifested the deepest interest in our project, and given all the aid that was asked for by the Committee.

The expenses of the Society are represented by the use of the Lecture room at each lesson, the use of gas on one occasion, and the destruction of a few duplicate specimens broken up and distributed. These are not, properly speaking, expenses, but rather the use of our Lecture room and material for the legitimate purposes of the Society, and yet how largely such usefulness is likely to be repaid may be judged from the incidental donations which we have received.

These consist of a full suite of the Marine animals of Wood's Hole, a very full and complete collection of the fauna on the Southern Coast of Massachusetts, presented to the New England Collection; also an equally complete collection of the Marine animals of the coast of Maine, made at Eastport, and named by Mr. Dwinelle from the collection of Prof. A. E. Verrill, well known for his long continued and accurate work upon the fauna of that region. These collections were purchased for the Teachers' School of Science by Mr. Cummings, but the duplicates alone will be sufficient to make up the collections which are to be distributed to the schools, and the first suite of specimens, including many species yet unrepresented in our Museum, is to become the property of the Society. My visit to Wood's Hole also enabled me to obtain a very complete set of the skins of the sharks, rays, skates and other large fishes, which were collected by the vessels and men in the employ of the U. S. Commissioner of Fisheries.

Mr. Charles Sprague, at my solicitation, has very generously donated two hundred dollars, and other gentlemen have expressed a willingness to assist in paying the expense of stuffing and placing them in our New England Section of the Museum. The larger part of these skins are now in the hands of the taxidermist, and I hope to see them completed before the end of this summer.

In this connection, also, it is appropriate to notice the present state of our relations with the Institute of Technology. The Lecture room of the Society has been but rarely oc-

cupied by the classes of the Institute during the past year. The Museum, however, has been used more freely, especially by the Custodian, in the instruction of the class on Palæontology. No damage to the specimens has yet occurred, nor is likely to occur, except through the carelessness of the officers to whom specimens are loaned. The rent paid by the Institute, four hundred dollars per annum, though only a fair equivalent for these advantages, is really so much additional income, which the Society appropriates to its own purposes.

That the judicious use of specimens is perfectly compatible with their safe keeping, is shown by these facts, and by the present condition of the Osteological and Zoological collections. The specimens of these departments have not only been frequently used as described above, but also in the illustration of our public evening courses, and yet in no case do they show the effects of careless handling; even if a certain amount of wear and tear should take place in the course of several years, it must be remembered that the specimens loaned for the purposes of illustration are not the rarest of their kind, but such as can be easily and readily replaced by purchase.

A considerable portion of my last Report was devoted to the discussion of a proposed plan of organization. The rearrangement of the Museum in accordance with this plan has been begun by the building of suitable cases for the reception of the Ornithological Collection in the uppermost gallery of the main hall. These cases having been completed the birds are now being removed into them from the gallery and rooms below, by Mr. J. A. Allen.

Extraordinary precautions were taken in order to render these cases absolutely insect tight. The lumber was very carefully selected and kept heated while the work was going on, all joints were tongued, grooved and glued. The tops, bottoms and sides, were built into the plastering, the sashes grooved and tongued and locked by wedge-shaped bolts. The latter were invented in order to draw the sashes up

tightly and firmly against the tongues at the top and bottom, and completely close the fronts of each case. Morse's patent brackets were used to suspend the shelving, which hangs upon the wall, and has no connection with the fronts. The success of these precautions is shown by the air tight condition of the cases. By suddenly opening or closing a sash one could readily crush in, or burst out, the neighboring glass panes. The resistance of the air is so great that it has to be overcome by a steady slow pressure as if one was working the handle of a piston.

With the exception of the method of bolting, and some other details, this plan is similar to that which has been successfully adopted by the Smithsonian Institution for the preservation of their valuable collection of birds, and was recommended to us by Prof. Baird.

The effort to free the infected skins from the ravages of Anthreni has been completely successful. Mr. Arthur Smith has repeatedly inspected the entire collection, bird by bird, during the winter, without finding a single living Anthrenus, and Dr. Brewer and Mr. Allen both confirm his report. The condition of some of the specimens when this movement began may be judged from the fact that they have been operated upon over twenty-five times before a cure was effected. Notwithstanding this, however, but very few specimens have been absolutely lost, only about half a dozen in all.

As soon as the birds are removed the Zoological collections will be concentrated in the first gallery of the main hall and the adjoining rooms. Many of the details of this part of the rearrangment of the Museum have been already completed, and the work can proceed with considerable rapidity. This redistribution will make room for the New England Collection, which will occupy the western end of the main gallery and the adjoining south western room.

Our collection of Sponges has been compared and named, as far as possible, with the aid of Oscar Schmidt's types, which the Custodian was permitted to use for this purpose by the Director of the Museum of Comparative Zoology.

The Conchological Collection is rapidly advancing to a satisfactory condition. Dr. P. P. Carpenter's services were secured for two months last summer. In this short time, however, this indefatigable and experienced Malacologist named and mounted our entire collection of Bivalves, and began upon the Univalves. A considerable portion of the latter were packed up in the early part of the last winter and sent to Dr. Carpenter, who has also completed them. They are now on their way back to us. The extraordinary celerity with which Dr. Carpenter works leads me to hope that this department will be placed in perfect order before the end of the coming year. The details of his work will be found in the special report of the Conchological Department.

The Palæontological section of the Museum has also been very much improved in appearance by the exertions of the President, Mr. Bouvé, who has remounted and rearranged all the fossils from the Potsdam to the Carboniferous inclusive.

The skeleton of the whale has been prepared by Dr. Thomas Dwight, Jr., assisted by Mr. Fletcher M. Abbott. It swings from the centre of the roof, nearly on a level with the first gallery of the main hall. Its perfection, and the admirable manner in which it has been mounted, render it a most valuable and attractive ornament to the Museum.

The entire collection of Coleoptera has been placed in insect proof boxes by Mr. Sprague, and he has begun to secure the Harris collection in a similar manner. I desire, however, to call the attention of the Society to the boxes upon the table. These are experiments upon the methods of mounting and illustrating the typical collection of insects, and will probably be adopted throughout that department. The difficulties that were overcome, and amount of study and labor expended by Mr. Sprague in making these pattern boxes, can only be rightly appreciated by those who have watched their progress. One of them exhibits the ventral and dorsal aspects of a large beetle, showing all the parts appropriately named. This is be the type of the order. The other boxes

contain the types of several genera and two families. The enlarged outlines of these small insects are given from the dorsal and ventral sides, accompanied by specimens having a similar position. On the right hand side of the box in each case are the characteristic parts, likewise greatly enlarged, so as to be readily seen, but each figure accompanied by its corresponding dissection. The characteristics of the family and genus are written opposite, so that the visitor sees at one glance the animal, its parts, and the family and generic characteristics. The outlines are drawn with the camera lucida, and corrected by the most careful study, so that they are as accurate as it is possible to make them.

This is the sort of work that should be done in every department, if we would render our type collections really useful. A single assistant may slowly, and by dint of patient labor, accomplish a great deal, and in the meantime I venture to hope that an interest in what we are doing will be incited in the minds of those who are able to relieve our necessities.

We are considered a wealthy Society, and so we are, as compared with other Societies, but we also have more to do. The times in which we live, the locality, and the cause of public education, demand an amount of progress which we have not means enough to sustain. This is not only felt in the Museum but the publications, and through them by all the Naturalists in this section.

Original investigations, which no publisher can afford to undertake, on account of their strictly technical character, have ever been the principal sources of knowledge, especially in Natural Science.

The usefulness of a Society, therefore, which is founded and carried on in the interest of Natural Science, depends largely upon its ability to furnish means of ready publication. We have succeeded in publishing several of the Memoirs that have been presented at our meetings, but others of great value have been necessarily rejected. One of these is now being published by the New York Lyceum of Natural

History. Nothing can be more injurious to the progress of science in this vicinity than such proofs of our inability to assist persons who spend their lives in the pursuit of the same objects as those for which this Society was founded, and is now carried on.

PUBLICATIONS.

The Society has published this year two quarterly parts of the 14th Volume of the Proceedings, and it is hoped that in a few weeks the 3d and 4th parts will be issued, completing this volume, and bringing the Proceedings up to date. Four articles of the Memoirs have been published this year, two of which should have appeared last year. These are "The Early Stages of Terebratulina" by Prof. Edward S. Morse, and the "Osteology and Myology of Didelphys Virginianus," by Dr. Elliott Coues. Another article on the "Embryology of Limulus Polyphemus" by Dr. A. S. Packard, will be issued this week.

MEETINGS.

There have been 18 general meetings, with an average attendance of 32 persons; nine meetings of the section of Microscopy, with an average attendance of ten; eight meetings of the section of Entomology, with an average attendance of 11 persons. Six Corresponding and thirty-four Resident Members were elected. Eighty-two communications have been made; of these 17 were made to the Entomological and 12 to the Microscopical section.

LIBRARY.

The accessions to the Library number 1667, and may be classified as follows: 424 volumes, 943 parts of volumes, 268 pamphlets, and 32 maps and charts. Prof. W. H. Niles and the Librarian have classified and arranged the Official Reports upon the various Geological surveys of the different States, and have succeeded in obtaining many Reports by purchase or otherwise, and there is now a fair prospect of

completing the list. To render these Reports accessible, however, considerable outlay for binding is necessary.

During the last month quite a number of recently published works have been purchased by the Wolcott Fund and placed upon the shelves. Correspondence with the department of mines of Victoria has been opened, and a set of their publications have been received. Six Societies in Europe, and one in South America, have presented their publications for the first time.

BOTANY.

The collections in this department have been carefully examined, a work which would have been unnecessary if the cases in which the specimens are stored had been of better construction. The absence of the police on exhibition days is endangering the specimens of the California Redwood and Palmetto, which have suffered considerably from the canes and parasols of visitors. A change has also become necessary in the Lowell Herbarium, and the Curator feels it is his duty to recommend that new cases be erected for its accommodation.

COMPARATIVE ANATOMY.

The chief work accomplished during the last year has been the mounting of the skeleton of the whale (*Balænoptera musculus*), which came into the possession of the Society in October, 1870.

The specimen is one of the most perfect in the world, as may be shown by enumerating the deficiencies. There are but sixteen chevron bones (eighteen have been found in some specimens), and some of these are imperfect. The inferior epiphysis of one ulna was lost. The petrous and tympanic bones of one ear were removed from the head, and prepared to show the internal ear and were not returned to the skull. Otherwise the skeleton is perfect, and besides having the last vertebra intact, although but one-half inch in diameter, it shows the two pelvic bones and the rudimentary femora.

The Committee deemed it best to suspend the whale from the roof at such a height that a good lateral view could be obtained from the first gallery, while the superior surface could be studied from the second, and the inferior from the floor of the hall. As it would have been a matter of great difficulty, if not an impossibility, to represent the intervertebral cartilages so that each should have its proportions perfectly normal, it was decided to suppress them. Consequently the length of the skeleton does not exceed forty-five feet, which implies a loss of three feet. It is suspended about twenty feet from the floor and forty feet from the ceiling, by three wire ropes for the head, two loops, besides a single wire rope, for the spinal column. The head was suspended independently of the spinal column, though they were subsequently attached. One wire rope pierces the beak near its end, and is attached to the middle of an iron bar connecting the mandibles, which are held behind by the extremities of the two posterior ropes, each of which pierces the outer part of the squamosal. Nuts on these ropes maintain the proper distance between the lower jaw and the skull. The relations can be changed, if desired, by altering the length of the ropes from the ceiling and the positions of the nuts.

The body of each vertebra was bored in three places by a half inch drill. One hole is near the inferior border in the median line, the other two are through the upper and outer parts of the body. Wrought iron rods three-eighths inch thick and twelve feet long (except near the ends of the column) were passed through these holes, and so arranged that while most of the vertebræ were pierced by three continuous rods, there should never be more than one solution of continuity in any given vertebra. The ends of the inferior rods were fastened securely together, and the couplings countersunk in the bones. Towards the end of the tail but two rods were used, and finally only one.

The anterior suspending loop passes through the bases of the transverse processes of the 14th dorsal, the second through

those of the 12th lumbar, and the single rope through the body of the 10th caudal vertebra. As has been anticipated, the flexibility of the iron rods was so great that almost any curve could be obtained by regulating the lengths of the suspending wire ropes, and by introducing small wedges between the bodies of the vertebræ in those places where the curve should be most marked. The highest point reached by any of the spinous processes is at the posterior end of the dorsal region. The flippers are presented of the natural size, each bone standing apart from the others at, or near as possible, the proper distance. They are attached to the scapulæ, and these to the ribs, but the chief support is obtained by two strong wires which pass from the back of the skull to the anterior loop, holding up a transverse rod passed through the head of each humerus. The advantage of this is evident, for any sinking of this rod will tend to strengthen the skeleton by pulling the ends nearer together.

Some additions have been made to the homological series, and several skeletons prepared and put aside to be mounted as soon as possible.

Among the donations received this year two deserve special mention. One is a beautiful head of a walrus, obtained by Capt. Fish, presented through J. S. Fay, Esq.; the other, the skeleton of an alligator, said to be about twelve feet long, shot in Florida and presented by H. S. Greenough, Esq.

RADIATA AND CRUSTACEA.

Work on the Hydroids and Corals has been in progress during the winter, and the preliminary arrangements for the removal of the two classes nearly completed by the Custodian.

MOLLUSKS.

Dr. P. P. Carpenter worked upon the labelling, arrangement and mounting of the shells for seven weeks and two days; the last three weeks of this time he was constantly occupied from 5¼ A. M. to 9.30 P. M. He was accompanied by an as-

sistant, who cleaned and mounted the specimens under his direction.

A large quantity of material which had accumulated was first unpacked and distributed into genera. The Bivalves were then reviewed species by species, named, labelled, mounted and arranged in the gallery of the Shell Room. The duplicates were picked out and stored in boxes on the upper shelves. Very few originals were found, and very few even of those that Dr. Gould presented to this Society. By an arrangement with Mr. Anthony of the Museum of Comparative Zoology, Dr. Carpenter secured his services until all our fresh water bivalves, the Unionidæ, were accurately named, and Dr. Stimpson, of Chicago, who was visiting here, very kindly solved for him the equally difficult problem presented by the Cycladidæ. Besides his work on the bivalves, Dr. Carpenter also completed the Strombidæ, Cassidæ, Dolia, Volutes, and the larger Cowries and Muricidæ, by adding to the Pratt collection of these families the species of our own collection which had not been mounted by Prof. E. S. Morse.

This great mass of work which would have been the creditable result of a year's labor on the part of any ordinary Malacologist, now fills the cases of the gallery, and the families just mentioned are in the floor cases. With the consent of the chairman of the Committee, the Custodian effected an exchange with Dr. Carpenter, receiving from him a first class set of British shells, in exchange for an equivalent series from our general collection of duplicates. This collection is especially valuable, as we had no authentically named British shells, and these had been named by Dr. Carpenter, after the types of McAndrews, Bean, Jeffry's and others. With the land shells we also received a small lot of very rare Mediterranean, and many of Tristram's types from the Holy Land. The whole amounts to about 414 species.

Dr. Carpenter wrote me in full the details of the work done, and his letter is filed as usual, and can be referred to

under the date of Aug. 21, 1871, No. 286½. During the past winter the same gentleman has been working upon our Univalves, a large portion of which was sent to him by Mr. Sprague. These have just been returned, and no formal report has been made upon the work, but I am able to say that about one-third of all the Univalves in the collection are finished, excluding all those previously mounted and labelled by Prof. Morse. Including these, about one-half are mounted and labelled, so that it is reasonable to expect that Dr. Carpenter, if he can be retained in our service, will be able to finish and catalogue the whole during the coming year. I have instructed Dr. Carpenter to divide the duplicates into complete sets for exchange, and sets of types suitable for presentation to educational institutions.

INSECTS.

The beginning of the present year was occupied by Mr. Sprague in completing the general collection of Coleoptera now contained in the railing cases of the upper gallery. In this were incorporated all the species from his own, Mr. Sanborn's private collection, and our miscellaneous collections. There were about one hundred species in all, including the entire family of Scolytidæ, which had to be worked out from Dr. Le Contes' monograph. All of the Coleoptera have been placed in a safe condition, and with a little care can be so maintained. They number about 10,000 specimens, and are contained in the improved style of box adopted by the Council. The New England Collection is progressing rapidly. The Cicindelidæ are completed, and the Carabidæ nearly finished.

Many species of Coleoptera have been described in our publications, especially the Journal, and Mr .Sprague has been, during a portion of his time, employed in making up a separate collection of species corresponding to these descriptions. This will be when completed an exceedingly valuable addition to our Museum, and should be followed in other de-

partments. During this work he has found quite a number of Randall's, and some of Say's types, the latter especially having been considered lost. They are badly damaged, but still capable of identification, and therefore very valuable. The Harris Collection has been several times re-examined, and at last a plan has been devised by which the trays can be made insect tight. This will save the Society the great expense of furnishing new boxes, and will be just as safe. A sample of one of these trays is upon the table and may be examined by the members of the Society. The work upon the type collection has already been sufficiently described in the general Report.

The larger collections received during the year are as follows: from Mr. James Boll, 150 specimens of European Lepidoptera, and 300 of Coleoptera, notable for their fine condition, and the care exhibited in their preparation; and in addition to previous gifts of valuable material the bequest of his entire cabinet, consisting chiefly of North American insects, coupled with a sum of money for its preservation by our late associate, Mr. Wm. H. Dale.

Contributions of exotic specimens in small lots are chronicled from Messrs. Samuel Wells, W. H. Holden, and Benj. P. Mann, besides a fine living specimen of *Mygale Hentzii* Gir., with its "trap-door" nest from Miss Nellie Stone of California. New England specimens, living and otherwise, have been presented by P. S. Sprague, Dr. G. F. Waters, I. G. Shute, F. A. Sherriff, A. B. Warren, F. A. Clapp, Luther Hills, Henry L. Moody, Miss C. Guild, and Mrs. McLean. *Boreus brumalis* Fitch, was found in great numbers by Mr. Moody, in Malden, upon the snow, Dec. 17th, 1872, and over fifty specimens of both sexes were presented to the Society by him. Subsequently, *B. nivoriundus* Fitch, the only other species known in his country, and new to the Society's collection, was obtained in smaller numbers and added to the cabinet by the Committee on Jan. 21st, 1872. Many of the specimens presented by Mr. F. A. Clapp were *chenilles sifflées*, carefully prepared by

him in the manner recently suggested by European entomologists, by emptying the larval skin and inflating it in a current of heated air.

FISHES AND REPTILES.

The labelling of the Fishes has been finished by Mr. Sanborn, and the Reptiles remain in the same condition as they were last year. We have received from the Smithsonian Institution a valuable lot of the skins of the larger fishes of the coast of Massachusetts, which have already been referred to in the general Report.

BIRDS, NESTS, AND EGGS.

The rearrangement of this department is proceeding rapidly. The attempt to place the birds according to their respective countries, in a grand faunal collection, has been abandoned. Mr. Allen devised a plan, at my suggestion, which was entirely practicable, and would have been easily completed. It was found, however, that the advantage to the Museum of having at least one of its departments arranged in faunal groups was more than outweighed by the disadvantages of such an arrangement. When assembled in faunal groups the systematic relations of animals are inconspicuous, reference to to any particular species is difficult, and among such a multitude of birds only the facts of the range of certain species over certain areas is shown. It was thought best, therefore, to place the birds systematically, so that the groups could be seen and studied together, and to supplement this with small collections, which should show how certain birds are modified according to their geographical distribution.

A number of valuable skins have been obtained by purchase from Mr. Kumlien of Wisconsin and Mr. Maynard, by exchange with Mr. Henshaw, and by donation from the Smithsonian Institution. The increase in both departments has been more marked by the great variety and value of the ad-

ditions than by their number. The nest and eggs of *Dendroica castanea* presented by Mr. Bailey, the eggs of the *Corvus Floridanus*, an egg of *Rostrhamus sociabilis*, one of *Ardea Wurdemanni* from Florida, and a fine suite of the eggs of the *Plectrophanes ornatus* from Mr. J. A. Allen, are among the more noticeable; also a suite of skins of the Connecticut Warbler, including a fine male in the spring plumage, from Wisconsin, a fine specimen of the Mourning Warbler from the same locality, also in the bridal plumage; a fine specimen of the *Anser frontalis* of Baird, now supposed to be an unusual plumage of *A. Gambelli*, and many other additions hardly less rare and valuable. About one hundred mounted birds have been added in the course of the year to our collection in the cases.

From time to time the collections of unmounted skins in the Society's drawers have been studied, labelled, catalogued and arranged in their respective families. All of these, with the exception of the humming-birds, the birds of prey and the water birds, have thus been carefully arranged. These are as follows: 23 species of Turdidæ, 5 Sylviidæ, 5 Paridæ, 11 Troglodytidæ, 1 of Motacillidæ, 38 of Mniotiltidæ, 7 of Hirundinidæ, 16 of Vireonidæ, 1 of Laniidæ, 4 of Ampelidæ, 9 of Cœrebidæ, 64 of Tanagridæ, 66 of Fringillidæ, 30 of Icteridæ, 16 of Corvidæ, 24 Dendrocolaptidæ, 22 Formicariidæ, 62 Tyrannidæ, 32 Cotingidæ, 5 Momotidæ, 2 Galbulidæ 2 Alcedinidæ, 5 Bucconidæ, and 45 Picidæ. In all, 475 species. Some idea may be formed of the great value, when I state that of these no less than 150 are entirely new to our collection, and are not to be found in our cases of mounted birds, while others are only represented with a single exception, by a single specimen each, and all these are American birds.

The Chairman of the Committee desires especially to express his thanks to Mr. George N. Lawrence, of New York, for the assistance which he has given him in the determination of doubtful species, and also to Mr. Robert Ridgeway of the Smithsonian Institution.

MAMMALS.

This collection, which is entirely composed of skins, has been most carefully watched, and is believed to be free from Anthreni, otherwise it is in the same condition as last year.

MICROSCOPY.

This department remains in the same condition as last year.

GEOLOGY AND MINERALS.

The geological collection remains as it was last year, in fair order but not in a satisfactory condition. It is hoped that during the coming year the Committee will rearrange the collection, so as to make it more interesting to visitors and more instructive to students. The Mineralogical Collection is in perfect condition, every specimen labelled and in its proper place.

The Geological Department has been increased by specimens presented by various individuals, among which may be noticed a series from Mr. L. S. Burbank, illustrative of his paper upon the Eozoon, some lavas from Dr. S. Kneeland, and a set of polished marbles from Mr. T. T. Bouvé. A magnificent specimen of rock composed of jasper and oxid of iron, weighing about a ton, brought from Lake Superior, has also been presented by the Massachusetts Institute of Technology.

The Mineralogical Department has been enriched by the presentation of various specimens during the year, of which may be particularly mentioned two large ones from Mr. F. Alger. One a huge crystal of beryl, the other a mass of rock, containing numerous beryls large and small. These were both brought from the town of Grafton, N. H., many years since, by the late Mr. Francis Alger, father of the donor. They will soon be properly placed in our entrance hall, where they will be objects of much interest.

There have been but few donations to the collection; the most important are 50 specimens of coal plants from Alle-

ghany Co., Va., by Albert Ordway, and 40 specimens of coal shale organisms from Newcastle on Tyne, by Rev. E. C. Bolles.

The condition of the specimens in the collection has been greatly improved through the labors of the President, Mr. T. T. Bouvé. The Paleozoic fossils have been mounted upon tablets, the labels revised, and the specimens arranged, so as to make them more instructive to the public.

APPENDIX.

The following is a quotation from the "Twenty-third Semi-annual Report of the Superintendent of the Public Schools of the City of Boston by John D. Philbrick" It gives the early history of the Society's attempt to introduce Natural History into the Public Schools and also a notice of the Lowell Courses of Lectures given both in our building and in that of the Institute of Technology.

He who would most effectually improve school tuition must find out the most effectual way of improving the teachers. Hence he is the greatest educational benefactor who does most to raise the character and qualifications of teachers. The wisest and most successful educators have already been most intent on providing the means, opportunities, and motives for the education, training, and continued improvement of teachers. The good teacher is always an active and ardent learner. The teacher who does not keep his mind fresh by new acquisitions is sure to sink into the ruts of routine. It is quite clear that the teacher who has not a strong inclination to self-culture has mistaken his vocation. It is not necessary that a teacher should confine his studies to the subjects he is required to teach. Indeed, it is highly important that he should study subjects which are not in the line of his teaching. Teachers not only become efficient and valuable, but they also become respectable, in proportion as they become learned and accomplished.

To one has been acquainted with the teachers of this city during the past quarter of a century it is evident that there

has been going on, during all this period, a gradual improvement in the qualifications of our teachers. This is owing mainly to the increase of the means and facilities for their education and culture. Foremost among these instrumentalities must be reckoned the Girls' High and Normal School and its Training Department. The courses of instruction in vocal and physical training by Prof. Monroe have been of great value in advancing the culture of our teachers. The free Lowell courses of instruction in science and literature, at the Institute of Technology, have afforded excellent educational opportunities, which have been improved by many of our most progressive and capable teachers. The same may be said of the courses of admirable lectures which have been open to teachers for a nominal fee at the Hall of the Society of Natural History.

It is with peculiar pleasure that I now put on record here some account of another highly interesting and important movement for furnishing all our teachers with the best free normal instruction in a department of education in which there is great room for improvement, namely, instruction in Natural History.

Some time last winter, Mr. John Cummings, whom, as a colleague in the government of the Institute of Technology, I had long known as an enlightened and liberal friend of popular education, suggested to me that if the teachers were disposed to receive practical instruction in certain branches of natural history, the means for furnishing such instruction would not be wanting. This suggestion was received by me with extreme satisfaction, for it was made by a man who means what he says. Nothing could have been more in accordance with my wishes and views. Soon after, the matter was brought before the Masters of the Grammar Schools at their regular meeting, and a Committee of their number was appointed to canvass the teachers on the subject, and co-operate in the proposed movement. The chairman, Mr. Page, Principal of the Dwight School, has kindly furnished me

with the following letter, stating what was done by the Committee of masters:—

"DWIGHT SCHOOL, Oct. 27, 1871.

"MY DEAR SIR: — Mr. John Cummings called at my house during the last winter, — January, I think, — and in the course of the evening developed his plan for teaching Natural Science.

"He thought it useless to go on as they had been doing. No *general* interest in any branch had been excited, and he thought it would be a great point gained, if by some means the *teachers of the Public Schools* could be aroused. He had great faith that if they would lend a hand, arrange a plan, get information on some branch, and begin to teach it, the next generation, at least, would feel the impetus, and something positive would be gained.

"I felt a good deal of sympathy, having just read Herbert Spencer, and so expressed myself. Mr. Cummings, however, was very anxious that the teachers themselves should take up the matter, initiate the necessary measures, and go forward while *he* stood in the background; he was not willing even that his name should be mentioned, and bound me to secrecy.

"The matter was brought to the notice of the masters at their next Thursday meeting, had your countenance and support, and a committee, consisting of Messrs. Metcalf, Clark, Hardon, Jones, and myself, was appointed to make some arrangement to meet the views of the unknown wealthy gentleman.

"After several interviews with members of the committee, Professors Hyatt and Niles, a circular was prepared, and sent to the schools of every grade. This circular I enclose. The response to it was prompt and unequivocal. Hundreds were anxious to avail themselves of such a course of instruction, and the circulars were returned full of names. This was in May; the first course of lessons was promised in October, and they (the Professors) are ready to commence with their first series, that on Physical Geography, Saturday afternoon, October 28th, at 3 P. M.

"This gives a running account of the arrangement with Mr. Cummings from my stand-point, and if of any service to you I shall be highly gratified.

"Very truly yours,

"J. A. PAGE."

The following is the circular referred to in the foregoing letter:—

"CIRCULAR.

"A wealthy gentleman of this city proposes to furnish the means by which the teachers of Boston may receive, from the ablest professors, instruction in the different branches of Natural Science. The offer is not limited to a single course, or to one year. It may extend over a series. It is very generous in its conditions, and needs only to be appreciated by the teachers to result in a grand success. It has already received the cordial approbation of the Masters.

"The plan may be summed up in part as follows:—

"Teachers of every grade are invited.

"Arrangements are to be perfected on or before the first of May next.

"The lectures are to be given in the afternoon of Wednesday or Saturday, as the teachers may decide.

"They will commence in October, and continue through the winter, at the Museum of Natural History, where the necessary apparatus and specimens are at hand.

"The earlier courses will be on Physical Geography, Botany, and Geology.

"These will be given by Professors familiar with the 'Object Method' of teaching, and skillful in the use of chalk.

"It is designed that the lectures shall be practical and familiar; question and answer to be allowed, and the whole subject slowly developed.

"The Professors are anxious to know how large a class they may rely upon, so that arrangements can be made before they leave the Museum for their summer's work.

"This statement is sent, therefore, as a circular for the signature of all those teachers who may see in this not only a munificent offer, but a great opportunity for lifting the teaching in all our schools to a higher level."

This plan struck the teachers so favorably, and was so well calculated to meet a want they had felt, that the circular was signed by upwards of *seven hundred* teachers.

Professor Niles, of the Institute of Technology, and Professor Hyatt, of the Natural History Society, the gentlemen referred to by Mr. Page, both learned and able lecturers on natural science, have been indefatigable in their efforts to render this plan complete and successful. At my request, the latter has kindly furnished me with with the following letter, setting forth the objects aimed at and the proposed method of proceeding:—

"DEAR SIR:—Your request to give a statement of the history of the movement which has culminated in the establishment of the Teacher's School of Science is more difficult to comply with than I had at first supposed.

"I cannot, within any reasonable limits, give an account of the experience which has led Mr. John Cummings, Prof. W. H. Niles and myself, after consultation with many teachers, to form the conclusions stated below.

"The diffusion of the knowledge of Natural Science among the people may be aided and assisted by public lectures on Science, but no very decided or permanent good can be anticipated, unless the minds of young people can be acted upon.

"Success, therefore, in reaching the roots of all instruction which lie in our Primary and Grammar Schools, can only be satisfactorily attained when all the teachers of the Public and Private Schools join heartily in the enterprise.

"Qualified scientific workers and lecturers are too few, and too much absorbed by strictly professional duties to act of themselves and directly upon the scholars; they must depend upon the teachers.

"Lectures, unaccompanied by collateral studies or laboratory practice, in the majority of cases leave only vague general impressions, which inspire respect for science, and, perhaps in a few instances, an earnest desire to know more; but they neither educate the eyes nor discipline the minds of the hearers.

"Lectures, therefore, to be given effectually, must be combined, as far as practicable, with a certain amount of laboratory practice; they must, in other words, in Natural History be object lessons.

"Specimens also to teach from, corresponding to those used in the lectures, must be furnished to the schools, wherever this is possible;

and in this way the scholars will ultimately reap the benefits of the courses given to their teachers.

"Governed by such impressions as the above, Mr. John Cummings voluntarily offered to support a course of Lectures to Teachers, to be given under the auspices of the Boston Society of Natural History. This liberal gift to the cause of education was accepted, and a Committee, consisting of the projectors of the enterprise and the President of the Society, appointed to attend to the matter.

"The plan of the Lectures is more especially the result of Prof. Niles' experience as State Lecturer to the Teachers' Institute, and the opening course to be delivered by him is intended to be, exclusive of its own specialty, an introduction to those which follow.

"These are Mineralogy by Professor Greenough, Principal of the Rhode Island State Normal School, Zoölogy by the undersigned, and Botany by Dr. W. G. Farlow, of Cambridge. The number of lectures in each course will be about ten, exclusive of the first on Physical Geography, which will consist of six.

"The courses, during this winter, will probably be limited to these four, as they are considered sufficient for the experiment, affording, it is supposed, a fair test of the proposed system.

"Doubtless much time and patience will be required for the solution of the numerous practical difficulties which have naturally presented themselves; but the spirit with which the matter has been received has greatly encouraged the Committee, who desire to express their thanks for the prompt co-operation of yourself and the Committee of Masters in carrying out their plan.

"Mr. Cummings, if our courses for the first winter prove a success, which we can reasonably hope for, will continue to support them for two successive winters, and in that time we anticipate the accomplishment of something more definite than it is possible to state now.

"We look forward to the evolution of a complete System of Instruction for Teachers, which will effectually reach their scholars and through them the public at large, by the slow but sure growth of the ideas they may get at the schools.

"Very respectfully yours,
"ALPHEUS HYATT,
"*For the Committee.*

"BOSTON, Oct., 1871."

The ticket for the first course is worded as follows:

"BOSTON SOCIETY OF NATURAL HISTORY.

TEACHERS' SCHOOL OF SCIENCE.

COURSE OF LESSONS ON PHYSICAL GEOGRAPHY,

BY PROF. W. H. NILES,

AT MASSACHUSETTS INSTITUTE OF TECHNOLOGY,

Saturdays at 3 P.M.—Commencing Oct. 28."

The first lesson of this course has been given in the elegant new Hall of the Institute of Technology, opened, on this interesting occasion, for the first time, to a class of our teachers, numbering probably six hundred. From the universal satisfaction manifested, it is expected that the class will be still larger at its next lesson. The lesson was an admirable exemplification of first-rate normal scientific teaching. It could not fail to be appreciated and admired by every intelligent teacher. I could not but feel that it was the beginning of a great improvement in the instruction given in our schools.

LOWELL FREE LECTURES FOR TEACHERS.

While Mr. Cummings is generously providing courses of lectures, exclusively for the benefit of teachers, Mr. John A. Lowell, as Trustee of the Lowell Institute Fund, has made liberal provision for free courses of lectures on different branches of natural science, to which teachers are specially invited, and which are well adapted to the wants of teachers, although not intended for them exclusively. These lectures, like those of the "Teacher's School of Science," are given under the auspices of the Boston Society of Natural History. The first courses were given in the lecture-room of the Society's Museum, last year. The following is the programme of the lectures for this season. The course by Mr. Brigham is now in progress, and the capacity of the lecture-room of

the Museum having been found inadequate for the accommodation of the teachers and others in attendance, the large hall of the Institute of Technology has been substituted for it.

BOSTON SOCIETY OF NATURAL HISTORY.

LOWELL FREE LECTURES.

The following courses will be given in the lecture-room of the Museum, Berkeley, corner of Boylston street, on Monday and Friday evenings, at 7 1-2 o'clock.

First course, beginning October 23, twelve lectures on Popular Geology, by William T. Brigham, A. M. Subject — "Water as a Geological Agent." Chemical and Physical Properties of Water; Dew and Rain; Springs; Rivers; Waterfalls; Bogs and Marshes; Lacustrine and Oceanic Deposits; The Ocean; Caverns; Snow and Ice; Glaciers; Deluges.

Second Course, beginning December 4, six lectures by B. Joy Jeffries, M. D. Subject — "Comparative Anatomy of the Eye and Vision."

Third Course, beginning December 25, ten lectures by Prof. G. L. Goodale, of Bowdoin College. Subject — "Physiological Botany." A study of some of the relations of Plants to Heat, Light, Electricity and Chemistry.

Fourth Course, beginning January 29, six lectures by Thomas Dwight, Jr., M. D. Subject — "Preservation of Life among the Vertebrates."

Fifth Course, beginning February 19, six lectures by William G. Farlow, M. D. Subject — "Cryptogamic Botany, with Special reference to the Algæ."

Sixth Course, beginning March 11, by F. G. Sanborn. Subject — "Talks about Insects."

These lectures will be illustrated by diagrams and blackboard sketches. Prof. Goodale will use the Electric Light.

Teachers of the public schools are invited to secure tickets for these courses.

Tickets will be ready for delivery in the library, from 10 A. M. till 5 P. M., a week before the beginning of each course.

J. A. SWAN, *Secretary.*

LOWELL FREE COURSES OF INSTRUCTION FOR TEACHERS.

For several years Mr. Lowell has supported free courses of Instruction in Science and Literature, at the Institute of Technology, which have been attended by many of our enterprising teachers. These courses are given on Wednesday and Saturday afternoons, or on evenings. This arrangement is the best possible for the accommodation of the teachers. The instruction is given exclusively by the Professors of the Institute. The following is the programme of the courses for the present season:—

MASSACHUSETTS INSTITUTE OF TECHNOLOGY.

LOWELL FREE COURSES OF INSTRUCTION FOR 1871-72.

"English Writers of the 18th and 19th Centuries." Ten lectures on Wednesday Evenings, at 7 1-2 o'clock, beginning November 15, 1871, by Prof. Atkinson.

"Progressive Development of Life in Geological Ages." Eighteen lectures on Tuesday and Friday Evenings, at 7 1-2 o'clock, beginning November 14, by Prof. Kneeland.

"Elementary German."—Eighteen lessons on Monday and Thursday Evenings, at 7 1-2 o'clock, beginning November 13, 1871, by Instructor Krauss.

"Elementary French."—Eighteen lessons on Monday and Thursday Evenings, at 7 1-2 o'clock, beginning January 15, 1872, Instructor Lévy.

"Elementary Chemistry."—Twenty lectures on Tuesday and Friday Evenings, at 7 1-2 o'clock, beginning January 16, 1872, by Professors Richards and Nichols.

"Chemical Manipulations."—Twenty-four Laboratory exercises on Wednesday and Saturday afternoons, at 2 1-2 o'clock, beginning February 3, 1872, by Professors Richards and Nichols.

"Physics."—Twenty-four laboratory exercises on Wednesday and Saturday afternoons, at 2 1-12 o'clock, beginning February 3, 1872, by Prof. Pickering.

These courses are open to both sexes. Applicants must be eighteen years of age, and apply in their own hand-writing not later than November 8, giving occupation and address. Successful applicants will receive their tickets by mail. Address Prof. G. A. Osborne, Secretary of Faculty, Boston.

JOHN D. RUNKLE, *President.*

TREASURER'S REPORT.

Report of E. Pickering, Treasurer, on the Financial Affairs of the Society, for the year ending April 30th, 1872.

Receipts.			
Dividends and Interest			$9,431.61
Courtis Fund Income			666.58
S. P. Pratt Fund Income.			820.00
H. F. Wolcott Fund Income			476.75
Walker Fund Income			2,466.30
Walker Prize Fund Income			265.20
Bulfinch Street Estate Fund Income			2,516.00
Annual Assessments			1,325.00
Admission Fees			125.00
J. Cumming's Donation			950.00
C. J. Sprague $200. Other subscriptions $99.26.			299.26
W. H. Dale, Bequest for Entomological Section.			500.00
Total			$19,841.70
Expenditures.			
Museum and Furniture		$1652.88	
Cabinet		1,927.63	
Library		656.27	
Publications and Printing	$2,934.29		
Less receipts	759.75		
		2,174.54	
Fuel		563.58	
Repairs of Museum		620.80	
Taxes		339.06	
Salaries		6,028.24	
Gas		65.72	
Lectures	$1,315.60		
Less Subsidy of Lowell Institute	1,200.00		
		115.60	
Teachers' School of Science		939.10	
General Expenses		879.63	
Walker Prize Fund Income		228.75	$16,191.8
Excess of Receipts over Expenditures			$3,649.89

The following is a statement of the Property of the Society, exclusive of the Cabinet and Library.

Museum Building.		
Cost of Building and Furniture	$138,989.94	
		$138,989.94
Bulfinch St. Estate Fund.		
120 Shares Chicago, Burl. & Quincy R. R. Co. . .	$15,380.75	
84 " Tremont National Bank.	10,122.00	
2 " Globe " "	257.12	
12 " Ogdensburg & Lake Champlain R.R. Co. preferred	1,281.50	
19 " Phila., Wilmington & Balt. R.R. Co. . .	1,038.75	
		28,080.12
Walker Fund.		
Notes secured by mortgage	41,105.00	41,105.00
Walker Prize Fund.		
14 Shares Vermont & Canada R.R. Co.	$1,429.25	
29 " Philadelphia, Wilmington & Balt. R.R. Co.	1,532.92	
10 " Ogd. & Lake Champlain R.R. Co. Preferred.	1,077.00	
Cash	325.64	
		4,364.81
Courtis Fund.		
50 Shares Globe National Bank	$6,250.00	
35 Shares Philadelphia, Wilmington & Balt. R.R. Co.	1,827.50	
$400 U. S. 5-20 Bonds	425.00	
		8,502.50
S. P. Pratt Fund.		
58 Shares Philadelphia, Wilmington & Balt. R.R. Co.	$3,057.25	
50 " Norwich & Worcester R.R. Co.	5,212.75	
10 " National Webster Bank	1,072.75	
6 " Boston National "	657.25	
		10,000.00
H. F. Wolcott Fund.		
60 Shares Philadelphia, Wilmington & Balt. R.R. Co.	$3,277.70	
28 " Ogd. & Lake Champlain R.R. Co. . .	3,031.25	
		6,308.95
General Fund.		
17 Shares Bates Manufacturing Co.	$1,700.00	
35 " Everett Mills	3,500.00	
30 " Hamilton Woolen Mills	7,500.00	
80 " Washington Mills	8,000.00	
13 " Cocheco Manuf. Co.	7,800.00	
2 " Lowell Manuf. Co.	1,800.00	
8 " Laconia Manuf. Co.	3,228.69	
4 " Pepperell Manuf. Co.	2,350.25	
1 " Amoskeag Manuf. Co.	1,400.00	
3 " Essex County Manuf. Co.	405.00	
2 " Manchester Print Works	1,550.00	
2 " Merrimack Manuf. Co.	2,220.00	
1 " New England Glass Works.	620.00	
12 " United States Hotel Co.	1,200.00	
19 " Neptune Ins. Co.	3,160.00	
18 " Boston Ins. Co.	2,160.00	
5 " Washington Ins. Co.	960.00	
141 " Vermont and Canada R.R. Co.	14,135.00	
95 " Michigan Central R.R. Co.	10,963.00	
50 " Ogdensb'g & Lake Champl'n R.R. Pref. Stk.	5,162.75	
50 " Philadelphia, Wilmington & Balt. R.R. Co.	2,732.60	
2½ " Boston & Lowell R.R. Co., ...	1,554.25	
50 " Norwich & Worcester R.R. Co.	5,150.00	
20 " National Bank of Redemption	2,465.25	
26 " Tremont National Bank	3,155.01	
50 " Atlas " "	6,046.75	
6 " Globe " "	771.38	
15 " National Webster "	1,684.00	
		103,373.93
Carried forward		$340,725.25

Brought forward			$340,725,25
Miscellaneous.			
Unsettled Accounts Receivable	$525.92		
Cash	$3,143.42		
		$3,669.34	
Less Account Payable		1,601.64	2,067.70
Total Value of Property April 30, 1872			$342,792.95

In addition to the above, the Society possesses a Cabinet and Library of inestimable value.

All which is respectfully submitted,

E. PICKERING, Treasurer,
Boston Society of Natural History.

Boston, April 30, 1872.

ANNUAL REPORTS

OF THE

Boston Society of Natural History.

1873 — 1874.

BOSTON:
1874.

CUSTODIAN'S REPORT.

The most important, as well as the saddest event of the past year, was the decease of Prof. Agassiz.

The great influence which he had exerted, and the deep feelings which he had aroused by his life, were apparent in the respect and sorrow manifested by the entire community.

The unusual tribute of a Memorial Meeting was accorded to him by the Society, the proceedings being appropriately conducted by those among our members who had been intimate with him in the early days immediately after his arrival in this country.

When Prof. Agassiz came to New England he found a small but enthusiastic body of men, mostly members of this Society, who were devoted to the study of Natural History. These gentlemen were striving to awaken the minds of the community to the importance of the study of the Sciences, not only as the best means for developing the natural resources of the country, but for the attainment of a more advanced stage of culture than had yet been reached. This building, with its Library and Museum, and the present prosperous condition and importance of this Society, are witnessess of the untiring energy and success of their efforts.

The first work of these pioneers in the study of Natural History was to reduce to rule and order the fauna and flora of this comparatively unexplored territory. How successfully this was undertaken, and how completely it was carried out, may be judged by the works of Binney and Gould, Storer, Emerson, Harris, Hitchcock and others whose names adorn the Annals of this Society and the Survey of the State.

Prof. Agassiz had, however, learned by actual experience, that the exploration of a new fauna, when carried beyond the strict limit of the discovery and description of the more obvious forms, was liable to lead to the pernicious habit of species hunting. He had witnessed the last days of the wild scramble for new species, which had followed upon the introduction of the Linnean nomenclature in Europe, and its injurious effects upon the minds of his fellow students. He had also taken part in the reaction inaugurated by Oken, Goethe and Von Baer, in Germany, and Geoffrey St. Hilaire, Lamarck and Cuvier in France, and felt that in this country the same battle must be fought over again. With the strength and enthusiasm, which we know so well, he endeavored to open the eyes of naturalists to the impending danger, and tried by all the means in his power to turn the tide of future researches in a more fruitful direction. How much we owe to his labors in this field may be judged by the almost universal tendency of our naturalists toward embryological and anatomical studies. We have seen this in the production of such works as Prof. H. J. Clark's "Spongiæ Ciliatæ," Mr. J. A. Allen's "Laws of Geographical Distribution among Birds," Dr. A. S. Packard's "Embryology of Limulus" and "Guide to the Study of Insects," Prof. E. S. Morse's "Embryology of Brachiopods," and Alexander Agassiz's "Researches upon Echinoderms."

How widely his labors have extended, and how deeply they have affected the whole country in this respect cannot be estimated; it would take up the entire space allotted to this Report, if presented in detail. It suffices to say, how-

ever, that his students, bearing with them more or less of his desire for the philosophical study of Natural History, have spread over the whole country. They have founded Museums in Chicago, Rochester, New York and Salem, and have established a Natural History periodical, "The American Naturalist," and a State Survey, that of Kentucky, to which I hope we may soon be able to add Massachusetts.

The constant efforts which Prof. Agassiz put forth in order to place the pursuit of Natural History in a favorable light before the people, entitle him to the heartfelt thanks of all lovers of that branch of science. The almost universal derision with which the pursuit of Natural History was viewed in former times, has been changed to respect, principally through his efforts. His great social influence and persuasive eloquence was constantly employed in this work. He consistently taught his students that the future progress of science in this country must largely depend upon the good will of the people; and he created by his own efforts that popular respect for Natural History which we now find throughout the whole country.

Even with such a brief statement of facts it is possible to see that Prof. Agassiz's biographer can claim for him the honor of having been the author of two revolutions, one scientific and one popular — one in the mode of studying Zoology, and one in habits of thought of the people at large.

Doubtless these remarks will seem sadly deficient to those who would naturally expect a more extended notice of his social and scientific character. This has, however, received attention from the President, Mr. Geo. B. Emerson and Rev. R. C. Waterston, and I should only repeat what these gentlemen have already so well expressed, and will therefore turn to the usual record of the year's work.

My visit to Europe in pursuit of my own studies afforded an opportunity to fill out the Palæontological collection. A fair representation of the strata of Western Europe was needed in order that we should be able to compare the con-

tained fossils in a general way with their synchronous representatives in North America. This met with the earnest approval of Mr. John Cummings, who generously furnished the necessary credit, and has given the collection to the Society.

By a lucky accident I was enabled to secure the collection of Oberfinanzrath Eser of Stuttgart, the printed catalogue of which lies upon the table.

This, next to the collection of Count Mandelsloh, was considered the best in Wurtemburg, with respect to the fossils of the tertiary and secondary periods, including also the triassic formations. It also possessed a fair representation of the fossils of the Carboniferous, and a small collection of Devonian and Silurian types. All of these fossils had been selected with great care, and Herr Eser had expended the leisure hours of nearly forty years of his life in accumulating them, during which time he made frequent and prolonged excursions to the most celebrated localities. He was in correspondence with the most eminent German Palæontologists, and the collections contain many originals and types described by such men as Hermann von Mayer, Oppel, Escher von der Linth, Heer and others. Besides suites of specimens with localities and names vouched for by these great authorities, the bulk of the collection possesses no little value derived from the careful determinations of Herr Eser himself, generally with the assistance of the authorities living near him, Prof. Quenstedt, Fraas and others.

The uniques which it contains, as might be anticipated from what I have said, are both remarkable and numerous. The locality of Unter and Oberer Kirchberg, which was first opened by Herr Eser, afforded many of these, named by Von Mayer and Heer. A collection from the eocene and cretaceous beds of Appenzell, Switzerland, is very fine. The Portland stone from the neighborhood of Ulm, contains many unique specimens described by Oppel, all the fossils found during the building of the extensive fortifications hav-

ing been sent by the chief architect to Herr Eser. The most valuable single series in the collection consists of the two head pieces and detached bones of Belodon Campbelli, described and figured by Von Mayer, the only remains of this remarkable animal ever found. I would also call attention to the specimens of tertiary plants, which are of such delicacy that they are mounted like botanical specimens on paper. Herr Eser assured me that it took him six months to clean and mount them, and they have been identified by Heer, the great fossil botanist.

This purchase left me at liberty to enter into negotiations for a collection of fossils to fill out the Silurian portion, which was poorly represented in Herr Eser's collection, and this I hope may still be sent to us. It was also essential that some larger specimens should be added to the collection, and this the generosity of Mr. Cummings enabled me also to accomplish by the purchase of several Icthyosauri and Teleosauri, and a magnificent plate of the expanded crown of Pentacrinus Briareus. Besides these collections, the Palæontological Department has also been richly increased by the acquisition of the splendid suite of Devonian fossils collected near Ithaca, N. Y., by the late Prof. Wm. C. Cleveland, one of the most accomplished observers it has been my good fortune to know. These fossils unfortunately were still unnamed, but this has been in a great measure remedied by the kindness of Mr. Richard Rathbun, who has named for us a large proportion of them, and about all our Chemung specimens from other localities. The Society owes this collection partly to the donations of Mr. Bouvé and Mr. Cummings, and partly to purchase.

A considerable proportion of the year has been taken up with the alterations now going on in the building. By these alterations it is proposed to obtain the desirable results of arranging the collections according to their natural order. A visitor when entering the building, will be directed by a guide-book to find the different departments. Usually speci-

mens are put in, like the plastering, to suit the inside of the building, and their natural affinities sacrificed more or less to every corner or inconvenient angle. We shall, undoubtedly, experience some difficulty in the arrangement of details in the separate collections, but we can rest assured that the natural sequence of forms, whether Mineralogical, Geological, or Zoological, will be as fully and better illustrated than it ever has been in any printed work embracing similar grounds, an achievement heretofore considered unattainable in Museums of the size of ours. I by no means desire to assume for myself the whole credit of this really extraordinary success; the peculiar construction of this building alone made it possible to adopt such a plan of arrangement, and reflects great credit upon the judgment and capacity of the gentlemen who superintended its erection. The President not only urged the adoption of the Plan of Organization which was announced in the Report of 1870–1871, but has ever since given it his most energetic support, and to his efforts the Society owes the great progress made at the present time.

The expense of these alterations necessarily came upon us all at one time, but it must be remembered that they will save the Society the expense of ultimately erecting a new building. The erection of an addition, which was contemplated, would necessarily involve not only a great outlay of capital in bricks and mortar, but a corresponding annual increase in our expenses for heating, lighting, and wages to employees, besides the accumulation of larger and costlier collections. These expenses would have at once disabled all attempts to render the Museum really useful and instructive to the public, and have obliged the officers and working members to give their whole time simply to the preservation of the constantly increasing collections.

The coöperation with the Institute of Technology, besides the usual use of specimens, has extended during this year to the delivery of a course of lectures by Prof. W. H. Niles, in this hall. The duplicate fossils have been worked over b

Mr. Crosby, and prepared for use as a study collection, to be placed in the southwest room in the basement, which has been floored, and will be fitted partly with the cases of the Rogers collection, and partly with duplicate cases from our own building. The collections of Prof. Wm. B. Rogers and Henry D. Rogers, now in the Institute of Technology, will be placed in this room until such a time as they can be worked up, and a complete suite selected for deposit in the show-cases. Fortunately Prof. Rogers will be able to give us his assistance in this work, and we hope to be able with his aid to restore the labels which have been lost or damaged. Mr. Crosby has prepared numerous microscopical sections and preparations of sponges, and the work in this department is progressing favorably.

The unfortunate illness of Mr. Sprague has interrupted the progress of the work in the Entomological department, though he was at work for a month at the commencement of the year, and has frequently inspected the collections since, as has also Mr. Emerton, who reports them free of insects.

Work upon the Mollusca, though interrupted, is now being continued by Dr. Carpenter. He, with his assistant, visited Boston last summer, and, aided by Mr. Emerton, packed and unpacked specimens, arranging and cataloguing a large number of them. During the winter Dr. Carpenter has worked up ninety sets of duplicate bivalves and large shells, his assistant being now engaged upon the last tray. The whole of the land shells and fresh water univalves are yet to be arranged.

Dr. Thomas Dwight, chairman of the Committee on Comparative Anatomy, reports that the cases have been improved by the introduction of glass partitions, and the locks changed, but that considerable alteration in the cases is still necessary.

A prepared skeleton of a horse mackerel has been added to the collection, and some valuable exchanges have been negotiated.

Work upon the fishes has been begun by Mr. Putnam, Chairman of the Ichthyological Committee, and he is now engaged in arranging and classifying the Lake Erie collection.

The Reptiles remain in the same condition as in former years.

The Ornithological collection has been frequently inspected during the year by Mr. Emerton, and is entirely free from insects. The collection of Mammalia is represented by a few wretched looking skins, and it would be better for the reputation of the Society to close the room in which they are, if they cannot be added to or improved.

Considerable work has been done in the Botanical Department by Miss Carter, a young lady employed by Mr. Cummings to inspect and arrange the duplicates. Mr. Brigham, chairman of the Botanical Committee, has removed the collections in great part to the new work room designed for this department, and reports that they are all in excellent condition.

Work has also been done upon the Mineralogical collections by Mr. Bouvé, chairman of the Mineralogical Committee, in preparing them for removal and display in the new cases now making.

The Geological collections have been removed and stored in trays preparatory to a similar removal by the chairman of the Geological Committee.

I am happy in being able to state that work has been begun by a competent Microscopist, Dr. Henry Coleman, upon the revision and arrangement of our valuable Microscopical collection, and that there is some hope of his being able to continue his efforts until the collection is put in a safe and accessible condition.

During the last year five Corresponding and thirty-one Resident Members have been elected. Seventeen general meetings of the Society, eight of the Section of Entomology and seven of the Section of Microscopy have been held.

The plan of notifying each member by a postal card, of the general meetings, and of the papers to be read at each, was adopted during the autumn, and has been attended with great success, as has been shown by the greatly increased interest and fuller attendance at the meetings. The latter has averaged, since October 15, sixty-four; whereas the average during the last year was twenty-five. The greatest number of persons present at any one meeting was one hundred and twenty-four, the largest Society meeting ever held in this hall.

From various unavoidable causes, only one course of Lowell lectures has been given during the past season, a course of four in number by Dr. Thomas Dwight, Jr., on living animal tissues.

The disastrous effects of the great fire, together with other difficulties, prevented the continuance of the lectures to teachers, which had been so generously maintained by Mr. Cummings, but it is hoped that these may be resumed at no distant time.

PUBLICATIONS.

The Society has published since last May four Articles in the Memoirs: on the Fossil Myriapods from Nova Scotia, by Mr. S. H. Scudder; on Earthquakes in New England, by M. Albert Lancaster; on Embryology of Terebratulina, by Prof. E. S. Morse, and a list of the Birds of Western Mexico, by Mr. Geo. N. Lawrence.

Of the Proceedings two parts, concluding the fifteenth volume, and two parts of the sixteenth have been issued.

LIBRARY.

In the two last Annual Reports the need of the addition of a gallery to the back library has been urged; this want was supplied last June, and the Library is now arranged so as to preclude the necessity of extended changes for many years, although it is probable that a necessity for more shelf room

will arise before the close of the present decade. The work of correcting the alcove catalogues has been accomplished; that on the card catalogue is still in progress.

The additions during the year number 1353, and may be classified as follows:—

	8vo.	*4to.*	*Fol.*	*Total.*
Volumes	246	75	2	323
Parts	652	177	4	833
Pamphlets	124	24		148
Maps and Charts				49
Total				1353

Two additions of great value deserve especial mention, viz.: two collections of original paintings of Georgian Insects, by John Abbot. One of these collections, painted for Dr. Oemler of South Carolina, consists of nearly two hundred plates, illustrating Lepidoptera in different stages, and was purchased for the Society by the liberality of several members. The second collection, the gift of Dr. Asa Gray, is of about the same size, and represents, in the main, species different from those illustrated in the first collection, while both contain but very few of the insects figured in the great work of Smith and Abbot on the Lepidopterous Insects of Georgia.

Seventy-one volumes have been bound during the year; as usual, however, the amount of the work remaining to be done in this respect has increased.

We have received exchanges for the first time from seven Societies, viz.:—

Gesellschaft für Erdkunde	Berlin.
Botanisch Verein der Provinz Brandenburg	"
Physikalisch-medicinische Societät	Erlangen.
Sociedad Mexicana de Geografia y Estadistica	Mexico.
Société d'Emulation du Département de l'Allier	Moulins.
Deutsche Gesellschaft für Natur und Volkerkunde Ostasiens	Yokohama.
Imperial Botanical Garden	St. Petersburg.

For extensive series of earlier publications, we have to thank especially the

Academia real das Sciencias	Lisbon.
Literary and Philosophical Society	Liverpool.
Kongliga Svenska Vetenskaps Akademien	Stockholm.

During the year six hundred and seventy-four books have been taken from the Library by eighty-nine persons.

TREASURER'S REPORT.

Report of E. Pickering, Treasurer, on the Financial Affairs of the Society, for the year ending April 30th, 1874.

Receipts.			
Dividends and Interest			$6,944.39
Courtis Fund Income			709.91
Pratt Fund Income			850.00
H. F. Wolcott Fund Income			464.00
Walker Fund Income			2,466.30
" Prize Fund Income			240.00
" Grand Prize Fund Income			94.00
" " " " Sale of Stock			728.00
Entomological Fund Income			75.00
Bulfinch Street Estate Fund Income			2,124.00
Admission Fees			100.00
Annual Assessments			1,385.00
Lowell Institute Subsidy for Lectures			138.76
Donations			580.00
Total			$16,899.36
Expenditures.			
Museum and Furniture		$3,423.81	
Repairs of Museum		864.02	
Cabinet		1,832.28	
Cleveland Collection of Fossils		300.00	
Library		527.76	
Abbot's Drawings of Lepidoptera		500.00	
Memoirs and Publications	$1,696.28		
Less receipts	562.87		
		1,133.41	
Lectures		141.11	
Gas		209.25	
Fuel		614.75	
Insurance		1,754.23	
Salaries		5,760.66	
A. S. Packard, Jr., Walker Prize		60.00	
A. Agassiz. Walker Grand Prize		1,000.00	
General Expenses		1,152.21	$18,773.48
Excess of Expenditures over Receipts			$1,874.12

E. PICKERING, Treasurer,
Boston Society of Natural History.

Boston, May 1, 1874.

ANNUAL REPORTS

OF THE

Boston Society of Natural History.

1874 — 1875.

BOSTON:
1875.

CUSTODIAN'S REPORT.

The changes in the furniture of the building, described in the last Annual Report, have been completed. More than half of the cases are now secured against the entrance of dust and insects, and the most valuable preparations can be safely trusted to their protection. If any member of the Society will take the trouble to walk through our rooms, he will easily satisfy himself of the necessity of these changes. The condition of the collections which still remain in the old cases, whose loose doors cannot be secured either against dust or insects, show this very plainly. The tablets in the Paleontological and Conchological collections, though but recently completed, are more or less disfigured by dust, and where more perishable specimens exist, as among birds and mammals, the amount of damage done will, in a few years, be irretrievable. The alterations were completed last July, and the work of removing the collections was carried on as fast as each room or gallery was made ready for occupation.

Mr. Emerton was occupied during the summer in removing the Geological collections and the collections of sponges, corals and echinoderms.

The minerals displayed have been rearranged by the President, Mr. Bouvé, many specimens, formerly stored in trays for want of space, having been added. They now make a

most attractive display in the newly furnished room on the right of the main entrance. The gallery of this room is occupied by a special collection of the minerals of New England, arranged by Mr. Bouvé. In the next room the same gentleman is at present engaged in revising and completely rearranging the Geological collection. This work is advancing very rapidly, and is already more than half done.

The Eser Paleontological Collection, presented to the Society by Vice President Mr. John Cummings, was removed by Mr. Rathbun, during last June, into the northeast corner room of the main hall. It is now being thoroughly revised by Mr. Crosby, and rapidly mounted for exhibition by Miss Carter, for whose efficient services we are indebted to the generosity of Mr. Cummings. This revision also includes the incorporation of all the European specimens formerly included in the general Paleontological collection, and the completion of a catalogue.

Mr. Crosby is also engaged in the revision of the American collection, and this is now being mounted by Miss Washburn, for whose desirable assistance we have also to thank Mr. Cummings. This work includes the naming and mounting of the Henry D. and Wm. B. Rogers collections, principally of fossils from Pennsylvania, the Cleveland collection of Devonian specimens, and the formation of an educational collection from the duplicates. The latter is progressing rapidly, and will soon be as complete as the Society can afford to make it.

The Rogers Collections have suffered much damage from the loss of labels; this is particularly the case with the Henry D. Rogers collection, which was packed with the greatest carelessness by the parties entrusted with its transmission to America, after the death of Prof. Rogers in Glasgow. The sudden illness of Mr. Wm. B. Rogers in the midst of his labors, unfortunately left his own collection also in great disorder. But it is a matter of sincere congratulation

that this honored member of our Society has so far recovered from his illness as to be again able to work with us. He has already reviewed the labels of a portion of his own collection, and expects to be able to continue his efforts until the whole of his own and his brother's collections have been revised. The southeast corner room in the basement was fitted up partly with the old cases which were removed from the former botanical room, and partly with the cabinets of the Rogers collections, and now serves as a general work room, as a lecture room and laboratory for the students of the Institute of Technology, and also as a storage room for the Rogers collections and the Educational collection. It makes a valuable addition to the working facilities of the Museum, and, in fact, is indispensable, since there is no other room in the building suitable for the general purposes of a laboratory.

During the summer the Custodian, assisted by Mr. Rathbun, worked for the U. S. Fish Commission, under the charge of Prof. S. F. Baird, to whom we are indebted for the ample opportunities for collecting which were given to us. The department of Marine Zoology and the Laboratory were under the immediate charge of Prof. A. E. Verrill, whose kindness and readiness to assist us we also desire to acknowledge with many thanks.

The service heretofore rendered by Prof. Baird to zoological science has been of general usefulness, but none, it seems to me has been of such wide-spread and growing importance as this one. He has been able by careful management not only to promote the main object of the Commission in the most economical manner, but at the same time to place within the reach of naturalists complete facilities for the exploration and study of the Marine Fauna of New England. Mr. Rathbun assiduously attended to the general dredging and shore collecting, accurately labelling every specimen. The valuable additions thus made to our New England collection have been since revised and placed in the most complete order.

The New England collection of shells has also been remounted and greatly enlarged by the same assistant, who has accompanied this work with complete lists, which will enable him to perfect this department as fast as opportunities for collections will permit. Unfortunately, there are at present no cases in which these beautifully mounted specimens can be exhibited.

The collection of New England Sponges, to which the Custodian paid special attention, has been much enlarged, and colored figures were made of every species, which will be used in the illustration of the collection.

A small donation from our former Vice President, Mr. R. C. Greenleaf, enabled us to begin a very important and long contemplated improvement in the illustration of our collection by means of anatomical models. Drawings were made of several of the living animal forms of the Mollusca by Mr. Rathbun, which have since been used in the manufacture of models. Several of these, showing the animal as it actually appears when living, have been completed. When this series is finished there will be another begun, representing the internal parts as they appear when the shell is removed. The experiment has shown the practicability of rendering our collections useful as a means of conveying accurate knowledge to general students, teachers, and the public. These models also will be appreciated by no one more highly than by the strictly professional naturalist, who must be a specialist of exceptional ability if he cannot gather new information from collections illustrated in this comprehensive way. It must be remembered, however, that the accurate study of all the species of a group unavoidably precedes the selection of the types and the moulding of the models. Miss Pratt's bequest has enabled us to do this with considerable rapidity among the Mollusca, but the insufficiency of the funds in every other department of the Museum will postpone indefinitely the completion of all other collections.

We have a fine building admirably adapted for its purpose, excellent collections, all those things which are most costly and most difficult to obtain. There is nothing, in fact, to prevent us from speedily possessing the most perfect Museum of our own class now in existence, except the want of funds to employ a sufficient number of competent assistants to work up the collections.

The Teachers' School of Science was resumed in the autumn of the past year, and has been successfully continued and liberally supported by donations from Mr. Cummings. A course of about thirty lessons upon Mineralogy has been given by Mr. L. S. Burbank, of Lowell, and the usual plan of giving away the specimens used at the lectures has been followed. Nearly a hundred sets of minerals have been distributed among the teachers of the public schools of Boston. In order to test the practical results of these gifts, Mr. Burbank was requested to collect statistics of the extent to which the materials had been used. The returns showed that in as many as fifty instances the collections were being intelligently employed in the instruction of students. The Society can therefore congratulate itself upon being the birthplace of the first really practicable movement for introducing the study of the Natural Sciences into the public schools of Boston.

The Botanical Collection has received daily attention from Mr. Cummings, and has been much improved by his own work and that of his assistant, Miss Carter. The general collection of plants has been rearranged by Miss Carter, and also the collection of specimens of wood, fruit, etc.; and the latter have been placed in the new show-cases, immediately over the closed cases containing the general botanical collection.

The Lowell Collection was found to be in very poor condition, many plants having been destroyed by insects. It has, however, all been rearranged, the duplicates have been picked out, and it now remains only to poison the specimens

in order to place the collections in perfect order. Mr. Cummings and Miss Carter have also about half completed a New England collection out of the duplicates of the general collection, which will be entirely finished and catalogued during the coming year.

A beautiful as well as valuable addition to this department has been made by Mr. Edward T. Bouvé. It consists of preparations of the leaves and stems of New England trees and shrubs, pressed between panes of glass, so that they can be readily studied without injury to the specimens. These will be accompanied by other specimens of the wood and bark, and will occupy a prominent place in the collection of New England plants. About one hundred species have been so prepared, and the whole list will probably be completed and exhibited during the coming year.

Among the donations which may be considered worthy of mention is one of birds, shells and insects, received as a bequest from the family of a deceased fellow member, Mr. F. P. Atkinson. Although very young, Mr. Atkinson had already shown much interest in the study of Natural History, and had attracted the friendly attention of many of the members of this Society, who deeply regret his early death.

The most important acquisition of the year, and also the last which it is my duty to record, came to us by the bequest of our former President, Prof. Jeffries Wyman. This distinguished Comparative Anatomist, deeply lamented by the members of the Society, was accorded the exceptional honor of a Memorial Meeting. The ceremonies of this meeting were made impressive by a respectful solemnity and a depth of feeling which will long be remembered by the Society. By his will the entire collection of anatomical specimens formerly exhibited in Boylston Hall, Cambridge, was left to the Society, conditionally, upon the payment of three thousand dollars. After much deliberation the Council decided to give a larger sum, out of consideration for his mem-

ory and the intrinsic value of the collection. They accordingly voted five thousand dollars, which has been paid to the heirs, and the collection is now being incorporated with our own, and undergoing a thorough rearrangement under the charge of the Chairman of the Committee on Anatomy, Dr. Thomas Dwight. A more detailed report will therefore be necessarily postponed until this work has been finished.

The Secretary reports as follows:—

The evening lectures, endowed from the Lowell fund by Mr. John A. Lowell, have somewhat changed their character on account of the increased price which it is now necessary to pay for lecturers. They have been reduced in number from forty to twenty. This year the courses have been as follows:—Six upon "The Chemistry of the Waters," by Dr. T. Sterry Hunt; six upon "Injurious Fungi," by Dr. W. G. Farlow; six upon "American Archæology," by Mr. F. W. Putnam; and two upon the "Village Indians of New Mexico," by Mr. Ernest Ingersoll.

MEETINGS.

There have been eighteen general meetings, with an average attendance of fifty-four persons; five meetings of the Section of Microscopy, with an average attendance of eight persons; six meetings of the Section of Entomology, with an average of seven persons. On two occasions one hundred and fourteen persons have been present at the general meetings. One Honorary, four Corresponding and thirty-seven Resident Members have been elected. Seventy-five communications have been presented.

PUBLICATIONS.

Since the last Annual Meeting, two quarterly parts, each of volumes XVI and XVII of the Proceedings, have been issued, and Part III of volume XVII is also nearly ready for distribution. Each part of volume XVII has one-third more

than the usual amount of matter. Four articles have published in the Memoirs, making one hundred and tl two pages, with three plates. Three others (with two pl are already in press. The articles that have alread peared are, "Recent Changes of Level on the Coa Maine," by Prof. N. S. Shaler; "The Species of the dopterous Genus Pamphila," by Mr. S. H. Scudder; tiquity of the Caverns and Cavern Life of Ohio Valley Prof. N. S. Shaler; "Prodrome of a Monograph of the inidæ," by Baron C. R. Osten Sacken.

LIBRARY.

The additions during the last year number 1397, and be classified as follows:—

	8vo.	4to.	Fol.	
Volumes	232	65		297
Parts	575	242	3	820
Pamphlets	234	23	4	261
Maps and Charts				19
Total				1397

The Society has opened exchanges with the follov named Societies and Journals:—

Belfast Naturalist's Field Club.
Academia Nacional de Ciencias Exactas existente en la Universid Cordova.
Cincinnati Quarterly Journal of Science.
Société d'Études Scientifiques de Lyon.
"The Academy," London.
Feuille des Jeunes Naturalistes, Paris.
Società Adriatica di Scienze Naturali in Trieste.
Wisconsin Academy of Sciences, Arts and Letters.
The American Sportsman (now The Rod and the Gun).
Cambridge Entomological Club.

During the year the Societies mentioned below have extensive series of their earlier publications.

The Literary and Philosophical Society	Liverp
Naturforschende Gesellschaft	Emden
The Literary and Philosophical Society	Manch
Kongelige Danske Videnskabernes Selskab	Kjöben

Number of persons taking books, 109; number of b taken out, 835; a large increase on previous years.

REPORTS ON SPECIAL COLLECTIONS.

MOLLUSCA.

The work of revising the general collection has been commenced, and quite largely carried out. The plan is essentially this: to retain in the display cases only the more typical forms of each genus and subgenus, and to attempt to illustrate no differences lower than those of generic value. The character of the animal of each family is represented, wherever possible, by a model of one of the typical forms. So far, eleven families, one of Gasteropods, Naticidæ, and ten of Lamellibranchs, commencing with the Pholadidæ, have been worked over in this manner, and eight models have been made. To more fully explain the plan, I give here an analysis of the work done upon the Naticidæ. Nine genera and three subgenera are admitted in this family by Dr. P. P. Carpenter, and also by H. & A. Adams, in their "Genera of Recent Mollusca." The genera are Natica, Lunatia, Nerita, Ampullina, Naticella, Polinices, Naticina, Cryptostoma, Amaura; the subgenera, Stigmaulax, Acrybia, Sigaretus. To illustrate the genus Natica we have selected eight species, representing the more marked differences in form and in color which occur within the genus; but this number might be much reduced. The species chosen are *canrena*, *labrella*, *lineata*, *maroccana*, *millepunctata*, *stercus-muscarum*, *spadicea* and *vitellus*. For the subgenus Stigmaulax the species *sulcata* is used. For the genus Lunatia, *monilifera*, *castanea*, *metastoma*, *Raynauldiana* and *solida*, and so on through the remaining genera and subgenera. The genus Amaura and the subgenus Acrybia are not represented in the general collection, but are contained in the New England collection. A note in the catalogue indicates this fact, and states where they may be found. It is intended to illustrate all the genera of each family in this manner. The models are made in the ordinary way of constructing plastic models. The animal is first built up in clay

from drawings, and then transferred to plaster by means of a gelatine mould. It has been found most satisfactory to work the model up only roughly in the clay, and finish all the details in the plaster cast. In many cases it has been possible to imitate the appearance of the surface of the body of the animal by covering the plaster with a thin coating of wax before putting on the paint.

For representing the animal of the Naticidæ, one of the more common New England forms, *Lunatia heros* was chosen. The animal is represented crawling on the sand, with the operculum lobe covering about half the shell, and with the mentum thrown up well in front. The body is shown as if much distended with water so as to have a length equal to about three times that of the shell.

Of the models of Lamellibranchs made, those forms possessing open mantles are represented as lying on the side with one valve imbedded in the sand, and with the siphons, foot and mantle lobes quite fully extended. Of those with closed mantles some lie on the side, but others are inclined backward, so as to show a portion of both valves. In some groups, as the Corbulidæ, where no large shells exist, no attempt has yet been made to model the animal. Each model is placed in the case with the family in which it belongs, and, where possible, New England forms have been chosen for modelling.

The families of Lamellibranchs represented by models, are as follows: — Pholadidæ by *Dactylina dactylus*, of natural size; Teredinidæ by *Teredo navalis*, enlarged over four times, and represented as if lying in its burrow in a section of wood; Solenidæ by *Ensatella americana*, the American razor shell; Myadæ by *Mya arenaria*, the common clam of New England, with the united siphons extended one and one-half times the length of the shell; Mactridæ by *Mactra solidissima*, a common New England clam; Tellinidæ by *Scrobicularia piperita*; the only reason for taking this form to illustrate the family Tellinidæ was that figures of no

other good forms were accessible; Veneridæ by *Callista Chione*, a very common European mollusk—it is proposed to make soon a model of our *Venus mercenaria*, to further illustrate the family; Cyprinidæ by *Cyprina islandica*, the only species at present recognized in the family.

The collection of New England shells has been entirely revised and remounted, the color of the tablets having been changed from black to dark blue, and the labels rewritten.

Most of the general collection has been received from Dr. Carpenter; but he still retains, and is at work upon, several groups, including the Neritidæ and Cerithiadæ. He has not yet completed his work upon the duplicate collections, and they also remain in his possession.

Besides the catalogue of the general collection in course of preparation by Dr. Carpenter, there has been made out the past year for the use of the Society, a general catalogue of the New England collection, and a catalogue of the testaceous mollusca known to have been found on the New England coast. The latter was compiled from the several works on New England Zoology.

The principal additions to the collection of Mollusca, recorded for the past year, are: — A lot of about one hundred species of dried specimens of lamellibranchs and gasteropods, collected in Florida and the Bahamas, by Dr. E. Palmer, and obtained for the Society by purchase; a number of foreign marine shells from the relatives of the late Mr. F. P. Atkinson; and many marine or fresh water shells, mostly from the Southern States, contained in the collection of the Messrs. H. B. and W. D. Rogers; besides the large collection made by the Custodian and Mr. Rathbun, while with the U. S. Fish Commission, at Noank, Conn., during the summer of 1874.

INSECTS.

All Harris's North American insects, except the Neuroptera and part of the Diptera, are now in the two black walnut cases built for them. Twenty of the drawers were fitted,

three years ago, with sliding covers, and are as safe as any boxes in the Museum, but the remaining forty drawers are loosely covered, and the specimens in them are more or less injured every summer by moths and Anthreni. The Neuroptera were revised by Dr. Hagen, and remain in the four glazed boxes where they were put by him.

Mr. Sprague began a revision of the Coleoptera, and finished it through the Staphylinidæ, six hundred and fifty-five species. The Histeridæ, named by Dr. Horn, were returned after Mr. Sprague's death. The succeeding families, as far as the Tenebrionidæ, about one thousand species in all, were removed from the drawers, and a new arrangement of them begun by Mr. Sprague. These have all been returned to the drawers, and Mr. Sprague's arrangement followed as far as possible, but no change of labels has been made. The rest of the Coleoptera remain as they were arranged by Mr. Scudder, with Harris's family and general labels, and Mr. Scudder's catalogue numbers. The European Coleoptera and Lepidoptera from Harris's collection are in three boxes covered with paper, among the foreign insects.

Mr. Sprague began several collections of beetles, described in the Society's publications, of which the types are lost. The collection of Randall's species, described in vol. II of the Journal, contains sixty-three species out of the eighty-two described. A list of these with notes was found among Mr. Sprague's papers, and has been revised by Mr. Austin for publication in the Proceedings.

There are also unfinished collections of the species of Cicindela of Massachusetts, described by A. A. Gould in vol. I of the Journal, of the species of Hispa, described by Harris in vol. I, and of the Coleoptera, described by Say in the same volume. A collection of Carabidæ, described by Kirby in Fauna Boreali-Americana, was made by Mr. Sprague, and compared with the types in the British Museum by Mr. E. C. Rye. This collection was returned just before Mr. Sprague's sickness, and was not rearranged by him. It has been trans-

ferred to a glazed box with the labels of Mr. Sprague and Mr. Rye.

Another work begun by Mr. Sprague was a revision of the New England collection of Coleoptera, but he only carried it through the Cicindelidæ and Carabidæ. The former are now on exhibition, illustrated by a drawing of *C. vulgaris*; the latter occupy three glazed boxes in the work room. The rest of the New England Coleoptera remain as arranged and labelled by Mr. Sanborn. The collection of beetles left the Society by Mr. Dale, was examined by Mr. Sprague, and such specimens as were needed in the Museum placed in other boxes, leaving a large number of duplicates in the book-shaped boxes used by Mr. Dale, where they are liable to be destroyed by Anthreni.

During the last year all the New England Hymenoptera and Neuroptera have been put on exhibition. Part of the Geometridæ have been taken to Salem by Dr. Packard, and returned named. The Noctuidæ, about two hundred and fifty species, have been named and arranged by Mr. Morrison.

The duplicate and unarranged New England insects, occupying thirty boxes and five hundred bottles, are all arranged by families in the workroom, the boxes containing pinned specimens covered with paper for safety.

Nearly all the foreign Coleoptera are now in glazed boxes, where they are comparatively safe; the remainder of the collection, consisting principally of Lepidoptera from South and Central America, is in small boxes, which have to be covered with paper every summer to avoid injury. Some three hundred bottles of foreign insects in alcohol are in the workroom, besides a few on exhibition in the Museum.

The collection of native spiders in alcohol, begun by Mr. Sanborn, now contains one hundred and thirty species, including all the common species in the neighborhood of Boston. During the last year a collection of dried spiders for exhibition was begun by Mr. Emerton, and now contains specimens of thirty-eight of the larger species. Eighty micro-

scopic specimens of palpal organs and other parts of spiders, described by Hentz, have been prepared.

The foreign spiders are all in the exhibition case in the northeast room, none of them named. The Scorpions and Phrynidæ are in the same case. The number of specimens is large, but of few species, and none are named.

TREASURER'S REPORT.

Report of E. Pickering, Treasurer, on the Financial Affairs of the Society, for the year ending April 30th, 1875.

Receipts.		
Dividends, Interest and Rents		$4,988.31
Courtis Fund Income		692.00
Pratt Fund Income		840.00
H. F. Wolcott Fund Income		464.00
Walker Fund Income		2,788.40
" Prize Fund Income		278.00
" Grand Prize Fund Income		60.00
Entomological Fund Income		30.00
Bulfinch Street Estate Fund Income		2,122.00
Annual Assessments		1,290.00
Admission Fees		170.00
Donation, R. C. Greenleaf		50.00
" J. Cummings		250.00
Lowell Institute Subsidy for Lectures		1,103.53
Publications		534.07
Total		$15,660.31
Ordinary Expenditures.		
Publications	$2,853.81	
Repairs of Museum	533.01	
Cabinet	1,808.50	
Library	623.78	
Fuel	899.00	
Gas	132.75	
Lectures	1,853.53	
Salaries	6,296.67	
General Expenses	1,410.45	$15,411.50
Excess of Receipts		$248.81
Extraordinary Expenditures.		
Museum and Furniture, additions and improvements		$10.689.01
Wyman Collection		5,000.00
		$15,689.01

E. PICKERING, Treasurer,
Boston Society of Natural History.

Boston, May 1, 1875.

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BOSTON SOCIETY OF NATURAL HISTORY.

ANNUAL MEETING, MAY 3, 1876.

REPORT OF PROF. ALPHEUS HYATT, CUSTODIAN.

The main object of an Annual Report is, of course, the exhibition of the progress made during the last official year These reports are, in this respect, condensed summaries of events as they happen, and are practically useful as historical records. The inexperienced or hopeful author, however, too often regards this annual essay as his only effectual means of appealing to the outside world for the relief of pressing necessities, or, perhaps, for pecuniary assistance in carrying out new plans, until years of repeated failure gradually produce the conviction, that all such appeals are worthless; and that they neither awaken sympathy, nor bring aid of any kind.

The utter inutility of printed matter is quite remarkable. The repeated assurances conveyed in our reports, and in various published statements of the Treasurer and other officers which have from time to time appeared, have not shaken in the least degree the general belief of the community that we are a rich society. This impression continues to be held, even by those perfectly well aware of the fact that our income would barely maintain a private family in respectable comfort in this neighborhood. We are not only expected

to make progress as if our income were fifty thousand instead of ten, but this same impression is nursed and kept alive in some quarters, by a spirit of criticism which is utterly regardless of the facts in the case. I am sorry to say, also, that this is not always done by inexperienced men, but often by those of greater or less scientific knowledge and acquirements, who are supposed to know something of the means at the command of the Society, and to be able to judge of the propriety or impropriety of the expenditures. It is strange that those who have so much to lose by the weakening of the influence and importance of scientific institutions should not be more cautious and considerate in what they say about them.

A very marked instance of this has occurred since this was written, but fortunately in so public a manner that the want of truthfulness and honesty in the whole criticism was easily exposed.

I will now pass on to the proper subject of my Report, the history of the last official year.

An event, which, in its results, was very satisfactory to the officers of this Society, occurred at the meeting when the present President, Mr. T. T. Bouvé, offered his resignation. I allude to the approbation of the policy which had governed the Society during his presidency, expressed by many of our most influential members. The officers of the Society felt themselves to be identified with the President in this matter; and, consequently, the ovation which he received, and the absolutely unanimous vote of a large and select meeting of the Society, requesting him to withdraw his resignation, were peculiarly grateful to them.

Mr. Bouvé, in what were intended as his valedictory remarks, most generously attributed to me the authorship of the plan of operations by which the Society had been governed during his administration, but did not do himself full justice in this and subsequent statements. If he, as Presi-

dent, had listened to the advice of several of the most experienced members of this Society, naturally his most reliable and trusted advisers, we should to-day, as in former years, have had no settled policy, and no plan would have been in existence. Fortunately, he preferred to judge of all matters presented to the Council upon their intrinsic merits; and the results have more than justified this course. It has been successfully demonstrated that the heterogeneous elements of a Society like ours can be united upon a common policy, and both move and act more effectually in consequence. I could readily dilate upon this theme, but do not feel disposed to obscure the fact that a movement of great importance to the future interests of science in America has been successfully accomplished, by means of the influence and independent judgment of our chief administrative officer.

Early in October the Council, in response to a communication from the Agent of the Centennial Commissioners of the State of Massachusetts, appointed a committee, consisting of the President, Mr. John Cummings, and the Custodian, to determine in what manner, if any, the Society should be represented at the Centennial Exposition. This committee drew up a set of propositions, a copy of which is appended to this Report, and submitted them to the Commissioners. They were received by Mr. Leverett Saltonstall, Mr. Meigs, and Mr. Hill, the three members of the State Commission, with the most earnest approbation. Various causes, which it would now be a loss of time to discuss, prevented definite action until after the 1st of March. Then, although the whole amount of the appropriation at first asked for was offered by Governor Rice, it had become too late to attempt the construction of the necessary collections. This failure was much to be regretted, since the Society thereby lost an opportunity of showing to the whole country the kind of work a Museum of this class ought to do, and how its collections could be made of use as part of the public educational system of the State.

While negotiating with the Commissioners the Custodian agreed to prepare a Geological Map of New England, as a part of the New England department in the Society's exhibition. Finally, at the request of the Commission, this was undertaken independently, and a separate sum appropriated for its execution. This map was entrusted to Mr. Crosby, by whom it has been compiled. It is based upon Edward Hitchcock's wall-map of 1841, but differs considerably from that, and from that of C. H. Hitchcock in Walling's Atlas. Many of the outlines are very much changed, and a very different translation given to the lithological structure of several portions of the State. The object in view, namely, the representation of the changes made in our views of the structure of the State by more recent observations, has been fairly accomplished, notwithstanding the shortness of the time allowed for the work. A text will accompany the map, describing the results in a brief form, and acknowledging our indebtedness to the various authors, from whose published or original works it has been constructed.

CONDITION OF THE COLLECTIONS.

Mr. Bouvé, as Chairman of the Committee on Mineralogy, reports that the collection remains in its former good condition. It has received some accessions during the year by the purchase of some desirable specimens from the Jackson Collection. It now consists of 3,230 trays and single specimens, of which 347 are in the New England. These are largely selected specimens, many of them of exceptional excellence and value.

The Geological Collection has been nearly completed by the same gentleman, and will be opened to the public within a short time. A full account of the mode of arrangement will therefore be deferred until the next Annual Report.

Mr. Crosby's time has been, of course, largely taken up by the preparation of the Geological Map, above described, and

this has interrupted the progress of the mounting of the Paleontological Collection, which was going on under his direction. Miss Carter has, however, finished the fossils of the Tertiary formation, in the European Collection, and Miss Washburn a considerable number of the American fossils; and this work will probably be speedily resumed.

The work on the Botanical Collection, under the charge of Mr. Cummings, has been going on steadily, although this gentleman's increased public duties have prevented him from giving us so much of his own time as in former years. The New England Collection has been completed, poisoned, and catalogued by Miss Carter, and is now ready for exhibition. It contains *nearly* every species found within the borders of the New England States and in most cases, two specimens of a species. There are 1984 species and 3227 specimens. The "Lowell Collection" is being poisoned and catalogued, one-third of it being already finished. Nearly one-half of the "General Collection" has also been catalogued and arranged.

The preparations of the leaves and stems of New England trees and shrubs, described in the last Annual Report, have been placed on exhibition by the donor, Mr. Edward T. Bouvé. They fill, together with the accompanying specimens of wood-sections, one entire gallery. They are also accompanied by a series of the plates from the last edition of "The Trees and Shrubs of Massachusetts," presented by Mr. Geo. B. Emerson, showing the natural colors of the leaves, flowers, and fruit. Altogether this collection must be considered one of the most attractive and instructive in the Museum, and the Society owes its most earnest thanks to the donor.

Miss Washburn has been employed during the greater part of the winter in cataloguing the Bailey Microscopical Collection. The labels, and entries on the labels, and loose manuscript slips accompanying the slides, have been, for the most part, entered by Miss Washburn in our running catalogue, and the incomplete descriptive Bailey Catalogue carried out and completed. Dr. Henry Coleman has continued

his work upon the Burnett Collection of mounted parasites. These have also, in common with our general collection of microscopical material, been catalogued by Miss Washburn.

The arrangement of the Wyman Anatomical Collection, and its incorporation with our own, has been finished by Dr. Thomas Dwight, and reported upon by him to the Society, in the Proceedings for October 20, of the present year. The Chairman of the Committee further reports that many sections showing the structure of bones have been prepared by him and added to the collection during the year, and also that the skeletons of a large sea-lion and of two fur-seals have been acquired, through the liberality of Capt. Charles Bryant, the Superintendent in charge of the Fur-Seal Islands.

The Palmer collection of Florida sponges has been acquired by purchase, and now forms the beginning of our new collection of Protozoa. Very valuable, though small, collections of Australian sponges have also been received from Dr. W. G. Farlow and others, so that the Society now possesses the finest dried collection of these animals in this country.

The Custodian spent the past summer with the Fish Commission, under the charge of Prof. S. F. Baird, at Wood's Hole. Here he enjoyed the facilities previously described in these reports, and considerably enlarged the New England Collection, for which the Society is indebted to the kindness of Prof. Baird, the United States Commissioner, and Prof. A. E. Verrill, Assistant in charge of the Zoological Department. The appointment of Mr. R. Rathbun as Assistant in the Royal Geological Commission of Brazil deprived the Society of his services at a time when they were most needed, and cut short the improvements which were so rapidly being made by him in the New England Collection. The Custodian was assisted in the summer work for a portion of the time by Mr. Simonds of Cornell; but this gentleman, also, received before the close of the season the offer of a more desirable position, and returned to Ithaca as Assist. Prof. in Paleontology.

Several models of the Mollusca were begun by Mr. Rathbun and one was nearly finished by Mr. Simonds. These have been completed by Dr. W. K. Brooks, Assistant in the Museum, and a number of new ones added. One of these, a very handsome model of *Sycotypus canaliculatus* Gill (*Busycon canaliculatum* Stimpson), represents a donation by Mr. R. C. Greenleaf, whose gifts enabled me to initiate the making of these models. Dr. Brooks has also begun the preparation of an accompaning suite of anatomical preparations for each model. At his suggestion, also, an important addition has been made in the shape of suites of models showing the principal stages in the development of the characteristic types of the Mollusca. Several families have now each their model and anatomical preparations of the animal, and the type forms of the generic groups have been picked out and are shown as in the specimens exhibited in the case upon the table. Dr. P. P. Carpenter has been continuing the work on the classification and labelling of the shells, and has completed all the larger genera of Marine shells and the very difficult group of Melanians, and all the remaining fresh-water genera, except the Pulmonates and the genera Cyclostoma and Helicina.

All the Annelids have been reviewed, sorted, and the Entozoa named by the Custodian, and the work will be continued until it is finished.

The Insects have received considerable attention at the hands of Mr. S. Henshaw, who reports through the Chairman of the Committee, Mr. S. H. Scudder, that the entire collection, including the general collection, the Harris, Dale and Atkinson bequests, has been examined and is free from Anthreni, only two living larvæ having been found. The North American specimens in the boxes covered with paper have been arranged in glass-covered drawers, and the boxes containing the foreign specimens recovered and their contents noted. The North American Coleoptera have been arranged, by families, in glass-covered drawers. The New

England collection of Coleoptera has been arranged as far as the Buprestidæ, but only placed on exhibition as far as the Trichopterygidæ, according to Crotch's Check-List. This includes six families, of which 457 species are known to occur in New England, and of these 327 species are on exhibition, all — with a few exceptions — New England specimens.

Mr. Van Fleck has been employed two days in each week in the general work of the Museum, during the past winter. He has also been occupied with the Fishes. All the generic types have been picked out and these will form the basis of our systematic collection, which it will probably not be very difficult to fill out. The Epitome collection of fishes has also been picked out by the same gentleman, and the duplicates and reserve collections sorted. Mr. Garman, of the Museum of Comparative Zoology, has been kind enough to look over and name a portion of our reptiles, and it is hoped that he will be able to complete this portion of our Museum during the coming year.

Our collection of Mammalia may be said to have been begun by the presentation of a fine Polar Bear by Bishop Williams, the skin of the famous greyhound "Brownie," by Mr. Addison Child, and a specimen of the celebrated breed of Ancon sheep by Mr. Geo. W. Bond.

Considerable assistance has been received during the year from the voluntary labors of Mr. Edward G. Gardiner, whose services have enabled us to carry on some advantageous exchanges and attend to a number of details which must otherwise have been neglected.

The Ornithological Collection remains in its usual good but dormant condition.

IMPROVEMENTS IN THE BUILDING.

During the year one more room has been fitted up with the improved cases and brackets for the reception of the New England fishes, reptiles, birds and mammals. The

building has been improved by the introduction of a larger service pipe, which now gives an ample supply of water, and every workroom is fitted with screw faucets. One large faucet with hose attached is always ready in the cellar, in case of fire, and three other sets of hose are distributed about the building for use, in case of necessity, in the workrooms. On the roof there are two more faucets, one on either wing, to which hose can be attached in case it is required in that quarter. Besides these precautions, buckets of water are kept in each workroom, accompanied by a Johnston pump, and three of the patent gas machines stand ready for use at three different points of the building. By these precautions three different means of extinguishing fire are placed within reach of any one who may first perceive it.

LABORATORY.

The condition of the Laboratory, in which the Institute of Technology and the Society are mutually interested, continues steadily to improve under the management of Mr. Crosby. The collections have been increased by the purchase of a few essential specimens by the Institute. The fossils have been rearranged so that things begin to assume a more permanent aspect. This Laboratory and the collection have also been used more or less by four female students, in addition to the usual number of students from the Institute. In this way it has been made useful to a very important and earnest movement for the diffusion of knowledge among women through the means of study offered to one of these female pupils.

TEACHERS' SCHOOL OF SCIENCE.

The Teachers' School of Science has been carried on as before, by the liberality of Mr. Cummings. Fourteen lectures or practical lessons in Lithology have been given by Mr. L. S. Burbank, during the past winter; the average attendance was about ninety out of one hundred members. This is a

remarkable fact, when we consider that the class includes a large number of the busiest teachers, the Masters of the Public Schools of Boston and the vicinity. Each member of the class was provided with tools consisting of small hammer. magnet, file, streak stone of Arkansas quartzite, a bottle of dilute acid with rubber stopper and glass rod and the scale of hardness previously used in the Mineralogical course. All these were purchased by the members of the class, except the scale of hardness, which is retained for future use. One hundred sets of about seventy-five specimens each, were distributed. Most of these were large enough for cabinet specimens, and many of the sets have been placed in the collections of the city schools and used in the instruction of the pupils. The specimens were largely collected in this State, and the rocks of the Connecticut valley and the western part of the State were very fully represented. The course is now being supplemented by a series of excursions for field work in the vicinity of Boston, voluntarily conducted by Mr. Burbank.

Seventy-five per cent. of the class this year were members of the last year's class in Mineralogy, and the great success of this year's work has been a matter of sincere congratulation, and justifies the most sanguine anticipations on the part of the projectors of this effort to introduce the study of Natural History into the Common Schools.

APPENDIX.

The following propositions to the Massachusetts Centennial Commission, Department of Education and Science, were made by the Boston Society of Natural History:

SIRS:—A committee was appointed by the council of the Boston Society of Natural History, at the meeting of Oct. 23, 1875, to make definite propositions to the commissioners with regard to the part, if any, which was to be taken by that Society in the Centennial Exhibition.

In accordance with the suggestions of Mr. Philbrick, the committee have divided their propositions into four heads.

The committee also beg leave to state that they are not empowered to urge the acceptance of these propositions, nor would it be proper for them, in any case, to attempt to magnify the importance of the service rendered to the cause of education by the Society.

They feel that the commissioners themselves are fully informed upon all these points, and are the best judges of the amount of the appropriations which the State can afford to make for such purposes, and therefore most respectfully submit the following propositions without further remark:

First — That the Society furnish a printed account of its past history and present condition and operations. This would include an explanation of the manner of arrangement of the Museum, and its uses in connection with the educational system of Massachusetts, as well as information with regard to the Lowell Lectures on Natural History, and the Teachers' School of Science supported by Mr. John Cummings.

This will cost the Society a certain outlay, but is in the direct line of their customary expenditures, and can therefore be done without cost to the commission. A certain amount of space would be essential in order to show the implements used in the lectures, the character of the specimens distributed as illustrations of the lectures given to teachers, and for the reception of the publications of the Society; say, fourteen square feet of shelving.

Second — That the Society endeavor to furnish plans of their building, of such a size as may be recommended by the commissioners. The committee cannot bind themselves to do this, but have reasonable hopes of obtaining these plans free of cost. The building is claimed to be one of the best, if not the best, of its class yet constructed. Together with these plans, the committee would propose to show such drawings of the cases and furniture as might be deemed desirable. The cases are probably, though made in the plainest manner, unsurpassed in efficiency, and will compare favorably with the elegant structures of the New York, Smithsonian and British Museums.

Third — That the Society furnish a synoptical collection exhibiting the extent and quality of the Museum and its mode of arrangement.

The Museum contains a classified series of collections, showing the

forms of all the natural products of the earth in the order of their affinities, beginning with the elements and ending with man.

The natural order of these affinities is strictly preserved.

The visitor is first introduced to minerals in the Mineral Room, then to the association of minerals in the form of rock masses in the Geological Room, then to the characteristic fossil plants and animals of each stratum of rock in the Palæontological Rooms, then to the systematically arranged plants and animals of the present time, which occupy all the rooms of the remainder of the building.

The same natural order is preserved in each room or department, the elementary forms being shown first, and the more complex in one or more series of ascending scales. The construction of the building is such that this can be done without confusing the visitor, who can review either the whole or any part of the collections, and yet receive a similar impression with regard to the interdependence of natural products, and the logical sequence of their affinities.

In other words, the Museum is a copiously illustrated natural history of the earth, of its elements, constituent minerals and architecture — of its history in past geological time, and its present condition so far as that can be presented in the existing minerals, plants and animals. In order to show this plan fully and make an impression, which would not fail to attract the attention of all persons interested in education and science, it would be necessary to allow one or two cases to each department, this being in about the proportion of one-twentieth or one-thirtieth, according to the size of the department.

The whole number of cases necessary would then be fifteen, and when set up would occupy one hundred and sixty-five feet of linear measure. Their other dimensions should be as follows: Depth to wall eighteen inches, height from floor seven feet.

The attractiveness and beauty of such a display would be very great independently of its value as an exponent of advanced views with regard to the proper uses of specimens in public museums, but the cost to the Society would be very considerable, not less than two thousand dollars.

Fourth — That the Society also exhibit selected portions of its New England collection. This follows the preceding collections, the arrangement of which has just been described, and supplements them. It contains all the species of minerals, fossils, plants and animals found within the geographical limits of New England, and it is arranged upon an entirely distinct plan from all the other collections.

The specimens are means for the use of those seeking special information with regard to any particular form found in this vicinity, and the Society strives to bring together all the attainable facts with regard to even the minutest variation in structure or habit. Multiplicity in the main body of the collections is avoided, types alone are selected; multiplicity of specimens is here the rule, exhibition of types impossible. The New England collections, in other words, serve as illustrated sources of reference for the correction or confirmation of facts observed in the field work of the teacher or general student, which last work can only be intelligently entered upon after the study of the general connections of things in the type collections. This department could be completely illustrated with selections occupying twelve cases, extending eighty-four feet, and the cost to the Society of the preparation and care of the same would be at least one thousand dollars.

THOMAS T. BOUVÉ, *President Bost. Soc. Nat. Hist.*
JOHN CUMMINGS, *Vice President.*
ALPHEUS HYATT, *Custodian.*